EFFICIENCY AND EFFECTIVENESS IN THE W.I.C. PROGRAM* DELIVERY SYSTEM

*The Special Supplemental Food Program for Women, Infants, and Children

U.S. DEPARTMENT OF AGRICULTURE
MISCELLANEOUS PUBLICATION NO. 1338

FOOD AND NUTRITION SERVICE
SEPTEMBER 1976

Use of brand names in this report does not constitute endorsement of the product named or imply discrimination against other products.

The research forming the basis for this publication was carried out by The Urban Institute, Washington,D.C., under contract from the Food and Nutrition Service, U.S. Department of Agriculture. Opinions expressed are those of the authors, and do not necessarily represent the views of USDA, The Urban Institute, or its sponsors.

TABLE OF CONTENTS

Page

Table of Contents (cont'd.)

EFFICIENCY AND EFFECTIVENESS IN THE W.I.C. PROGRAM DELIVERY SYSTEM

The Special Supplemental Food Program for Women, Infants, and Children

Marc Bendick, Jr.
Toby H. Campbell
D. Lee Bawden
Melvin Jones

The Urban Institute
Washington, D. C.

EXECUTIVE SUMMARY

Two years of program operation have generated substantial experience in administering the Special Supplemental Food Program for Women, Infants, and Children (WIC). A survey of 96 WIC clinics and 3,600 WIC participants was conducted in April 1975 to determine how the general WIC concept had been implemented and which implementations were most efficient and effective. This report presents the findings of that survey, and this summary highlights the contents of the report.

WIC is intended to serve individuals declared to be "at nutritional risk" by nutrition and medical professionals on the basis of low income and other factors. It is restricted to pregnant, nursing, and postpartum women and children up to their fifth birthday, because supplemental nutrition to these groups is believed to have lifelong beneficial effects on the health and development of infants and children.

The WIC program is operated by state departments of health under funds granted by the United States Department of Agriculture. The key elements of the program are as follows: (1) It is operated through health clinics serving

low-income areas. (2) Eligibility is judged by health professionals considering low income and medical conditions. (3) Eligibility is restricted to pregnant or nursing women and children up to their fifth birthday. (4) Participation results in receiving about $20 worth per month of a small range of high-protein, high-mineral, and high-vitamin foods. Within these constraints, and in the spirit of WIC as a demonstration program, states and WIC clinics were allowed to establish a variety of policies and procedures.

One focus of this study was to compare three alternative methods for physical distribution of WIC foods: 1) retail purchase, 2) home delivery, and 3) direct distribution. Under retail purchase, the participant receives from the WIC clinic food vouchers which she redeems at a retail store; in home delivery, a commercial dairy delivers WIC foods to recipients' homes; with direct distribution, the participant picks up foods at the WIC clinic itself. Attention was also given to other operating policies, such as eligibility procedures, foods offered, methods of outreach, techniques of nutrition education, and voucher design.

FINDINGS ABOUT WIC PARTICIPANTS (CHAPTER 2)

Clinics spent an average of five percent of their administrative budgets in outreach efforts to recruit and retain WIC participants. In 67 to 87 percent of clinics, these efforts involved formal publicity campaigns utilizing posters, leaflets, or newspaper or radio advertisements. However, only about five percent of WIC participants heard about WIC through these means; ninety-five percent of participants first heard about WIC by word of mouth, either from health and social services professionals or from friends and acquaintances.

WIC eligibility policies are largely determined at the clinic and program area offices, and the survey found wide variation in policy. Eligibility was usually determined utilizing one or more of the following factors: residency in the service area of a WIC clinic, family income, medical test results, and requirements that participants attend the clinic for health care. About half of WIC administrators surveyed indicated that lack of USDA guidance on eligibility criteria was a problem.

About 60 percent of WIC clinics used laboratory medical tests to measure nutritional risk, while the remaining clinics relied on physical measurements,

diet histories, and/or low income. Clinic policies varied with regard to which subgroups of WIC-eligibles--children, infants, pregnant women, nursing mothers--should receive priority.

The survey found that substantial proportions of WIC recipient households were low income. The median household income was $4,388, and 65 percent of households reported incomes below the poverty threshold. However, nine percent of households reported annual incomes of $10,000 or more, and the income profile of WIC recipients as a whole was higher than that of food stamp recipients. Comparatively high income recipients tend to be found at clinics with either no explicit income criteria for eligibility or at clinics with an explicit criterion with a high cutoff (e.g., $12,000 annual income for a family of four); this variation is allowable under current WIC regulations in which the only mandatory income criterion is that WIC participants be eligible for free or reduced-price care at health clinics serving low-income areas.

Forty-nine percent of WIC recipient households were also receiving food stamps. Thirty-eight percent of households have children receiving school lunches, and eight percent have children receiving school breakfasts.

FINDINGS ABOUT WIC FOODS (CHAPTER 3)

The WIC food package consists of only a few foods: iron-fortified infant formula, milk or cheese, eggs, high-iron breakfast cereal, and high-vitamin fruit juices. Both WIC administrators and WIC recipients found it feasible to work with the current set of WIC foods. Only six percent of recipient households expressed general dissatisfaction with WIC foods.

Eggs and cheese were particularly popular, problem-free foods. Frequent suggestions were made by both participants and administrators to expand the set of authorized breakfast cereals and particularly to include hot cereals; after the survey, USDA revised food regulations expanding the set of allowable cereals for children and adults from four brands of cold cereals to six brands of cold cereals and two brands of hot cereals. Over 85 percent of administrators reported that they wanted more flexibility to tailor food allotments to individual medical conditions and patterns of development. For example, they would like to provide special formulas to children beyond

one year to age who exhibit slow patterns of development or who suffer from milk allergies, and they would like discretion to introduce some adult foods prior to the first birthday.

Neither administrators nor participants strongly advocated expansion of the set of currently available foods; strained infant food, meat, and fruit garnered two-thirds of participant mentions of foods they would most like to add. Recipients of different ethnic backgrounds exhibited few differences in food preferences among the WIC selection of foods. Allergic reactions to milk and to iron fortification in formula were reported by administrators and participants for between seven to 10 percent of recipient households.

One underlying concept of the WIC program is that WIC foods should be consumed only by the infants and mothers enrolled in the program. However, 81 percent of participant households reported that they used the foods to prepare dishes for the entire family. A second underlying concept of the program is that the quantity of food to be distributed should be determined individually for each recipient. However, 76 percent of clinics automatically distribute the maximum quantity to all recipients.

FINDINGS ABOUT OTHER WIC BENEFITS (CHAPTER 4)

In addition to receiving WIC foods, many WIC participants also receive counseling in nutrition, and at the same time their utilization of medical services provided by the clinic increases.

Seventy percent of clinics reported that they provided nutrition counseling to virtually all WIC participants, and 63 percent said that the WIC program had increased the amount of nutrition education that they were providing. Much of the education was provided to participants on a one-to-one basis, while some clinics also provided group lessons (including lectures, discussions, films).

Nevertheless, only 12 percent of participants who received nutrition education indicated that they learned something from the experience. Those nutrition education efforts which seemed to have the greatest impact on recipients were those in which: 1) nutrition education was a routine, integrated aspect of the WIC program; 2) the educators understood the specific circumstances of the recipient households such as what each member of the family ate and how much money was available for food buying; 3) lessons and recipes

were tailored to participants' lifestyles and ethnic backgrounds; 4) lessons encouraged marginal changes rather than radical changes from current eating habits; 5) lessons were provided in a simple and concrete manner, using simple language and pictures to illustrate ideas; and 6) individual follow-up to each lesson ensured that the content could be applied to each recipient's specific situation.

Participation in the WIC program was associated with increases in utilization of medical services by WIC recipients and their families. This effect held true for all categories of WIC participants, with administrators estimating a 14 percent increase in health clinic visits for women, a 27 percent increase for infants, and a 77 percent increase for children. Administrators also estimated that WIC participants kept a greater proportion of health clinic appointments than would the same patients without WIC. These effects held true for all three food distribution systems. Sixty-nine percent of clinics required that participants be enrolled in the health services of the health clinic hosting WIC in order to participate in the WIC program.

FINDINGS ABOUT WIC COSTS (CHAPTER 5)

The federal government reimburses states for the entire cost of foods distributed through WIC, plus administrative expenditures of 20 percent of total WIC program costs (i.e., 20 percent of food costs plus administrative costs, which can also be stated as 25 percent of food costs alone). The average monthly food cost per recipient is $20, which implies administrative reimbursement of $5 per recipient and total costs monthly per recipient of $25. The average actual administrative cost per recipient per month for surveyed clinics was $4.92, which suggests that the $5 average reimbursement from the 20 percent reimbursement formula covers the cost of administering WIC in average circumstances. However, a great deal of variation in administrative cost was observed in the sample, with actual administrative costs ranging from $2 per recipient per month to over $9. While some of this variation is attributable to differences in services provided or in efficiency, some of it is due to the circumstances in which clinics operate and the policies which clinics have adopted:

- Direct distribution clinics had the lowest administrative costs, costing 82 percent of the national average of $4.92. Retail purchase

clinics cost about 99 percent of the national average, and home delivery clinics cost about 102 percent of the national average.

- By region, costs were lowest in the Southeast (where costs averaged 71 percent of the national average) and highest in the West (where costs averaged 142 percent of the national average). Clinics in small and medium-size cities had lower costs than clinics located in rural areas and in larger cities.

- WIC programs sponsored by hospitals were about 50 percent more expensive to operate than those sponsored by city or county health departments or private, nonprofit clinics.

- Clinics with an authorized caseload of 100 participants cost about twice as much per participant to operate as clinics with an authorized caseload of 10,000.

WIC programs allocated an average of 28 percent of administrative costs on general administration, 25 percent on issuing food and vouchers, 22 percent on participant certification, 11 percent on nutrition education, nine percent on fiscal management, and five percent on outreach. They incurred 29 percent of their personnel costs for fiscal and administrative personnel, 21 percent for clerical personnel, 18 percent for nutrition professionals and aides, 12 percent for nurse and laboratory technicians, 12 percent for social workers, and nine percent for physicians.

While administrative costs make up 20 percent of total WIC program costs, the remaining 80 percent is accounted for by food purchase costs. The analysis suggests that food purchase costs of some clinics can be reduced by obtaining sales tax exemptions in jurisdictions which charge sales tax on food purchases and might also be reduced by more extensive utilization of competitive bidding.

Basing administrative reimbursement on food costs reduces incentives for state and local administrators to minimize food costs, as well as creating incentives to select certain food distribution methods. In retail purchase distribution systems, "food costs" represent retail prices. In direct distribution systems, they represent wholesale prices, which average 16 percent less than retail prices for WIC foods. In home delivery systems, they represent retail prices plus a charge for delivery, which averages 12 percent. Because federal reimbursements to state offices and clinics are based on "food costs," a direct distribution clinic can increase its administrative reimbursement by about 16 percent by changing to a retail purchase system,

while at the same time shifting food handling costs to retailers. A further 12 percent increase in administrative reimbursements can be realized by switching from retail purchase to home delivery, while simultaneously shifting even more work to food vendors.

FINDINGS ABOUT WIC OPERATIONS (CHAPTER 6)

The chapter on WIC operations discusses a number of relatively unrelated topics having to do with the details of WIC administration. These include the division of responsibility between state and local offices, design of vouchers, relations between WIC and participating food vendors, and recipient satisfaction with the WIC program.

In 72 percent of clinics in the sample, the state health department shared administrative responsibility with semi-independent "program area" offices for operating WIC; in eight percent of the clinics, the state office operated the WIC program directly, and in 20 percent of the clinics, the program area offices took nearly all responsibility, with state offices serving mostly as a conduit of funds.

Vouchers in use in the sample of clinics ranged from mimeographed slips of paper to carefully designed forms utilized in computerized reimbursement procedures. Thirty-eight percent of the clinics used commercial banks to handle reimbursements.

Eight percent of food retailers and three percent of participants interviewed stated that they had been involved in purchases of foods other than WIC-authorized foods using WIC vouchers.

Fifty-six percent of participants reported that they visit the WIC clinic once per month, while seven percent do so more often, and 37 percent do so less frequently. Thirty-one percent of WIC recipients had to make some form of special arrangements to get to these WIC clinic appointments (including transportation, child care, or arrangements to miss work or school). Policies utilized by clinics to lower these costs of participating and reduce their discouragement effects include providing free transportation (done at 53 percent of clinics), keeping clinics open during evening and weekend hours (done at 15 percent of clinics), and making follow-up phone calls for missed appointments (done at 68 percent of clinics). Confusion about rules raised difficulties for some recipients. For example, 28 percent of food retailer complaints about WIC operations concerned recipients' failure to comprehend the system.

Ninety-six percent of WIC participants stated that they were satisfied with the way they received their WIC foods. This level of satisfaction extended to all three distribution systems, with 96 percent of recipients declaring themselves satisfied with retail purchase, 95 percent saying they were satisfied with home delivery, and 94 percent saying they were satisfied with direct distribution. The direct distribution system imposed the highest burdens on participants (in terms of out-of-pocket costs and the necessity to make special arrangements), while the home delivery system imposed the least burdens.

A COMPARISON OF FOOD DISTRIBUTION SYSTEMS

Exhibit S.1 summarizes some comparisons made among the three major food distribution alternatives examined in this study. No single system was best on all aspects of the WIC program.

The main advantages of direct distribution are low cost (both administrative cost and food cost), high control of the food package against unauthorized substitution, and the physical presence of participants at the clinic to receive nutrition education and to utilize other health services; its main disadvantages are the comparatively high costs and inconvenience imposed on participants (of traveling to the clinic and transporting heavy grocery bundles), and some problems of food stock-outs and inability to handle perishable foods.

The home delivery system complements the direct distribution system by being strong where the other is weak and vice versa. Home delivery tends to be more expensive in terms of administrative costs (although, since competitive bidding is feasible, perhaps not in food cost). It is more convenient for participants because the frequency of visits to the clinic may be less and because groceries are delivered to the home, requiring neither carrying bundles from the clinic nor from the retail grocer. Nutrition education and encouragement of medical utilization require visitation by participants to the clinic, however, so the convenience effect may be partially reduced if these results are sought. The range of foods handled is complete, and stock-outs do not usually occur, but control of food substitution may be a problem.

The retail purchase system strikes a middle ground between the other two systems. Its administrative costs are intermediate, though its food

Exhibit S.1

A COMPARISON OF THREE ALTERNATIVE METHODS OF FOOD DISTRIBUTION

Program Aspect	Index	Direct Distribution	Retail Purchase	Home Delivery
Operating Costs	Monthly administrative cost per recipient	Lowest	21% higher than direct distribution	25% higher than direct distribution
	Feasibility of lowering food costs by competitive bidding	Feasible	Not feasible	Feasible
Recipient Preferences	Recipient stated satisfaction with food distribution	94% of recipients satisfied	96% of recipients satisfied	95% of recipients satisfied
	Out-of-pocket costs and inconvenience to recipients	Highest	Intermediate	Lowest
Operational Considerations	Susceptibility to unauthorized food substitutions at recipient request	Lowest	Higher than direct distribution	Higher than direct distribution
	Frequency of food stock-outs	Occurs occasionally	Occurs occasionally	Virtually never occurs
	Range of foods handled	Some clinics do not carry perishables such as fresh eggs, fluid milk, and cheese	All	All

Exhibit S.1 (cont'd.)

Program Aspect	Index	Direct Distribution	Retail Purchase	Home Delivery
	Delivery of nutrition education	Compatible if food distribution is not at a warehouse remote from clinic	Compatible if participant must pick up voucher at clinic	Compatible if participant must visit clinic to have home deliveries continue
	Encouragement of increased utilization of health care services	Compatible if food distribution is not at a warehouse remote from clinic	Compatible if participant must pick up vouchers at clinic	Compatible if participant must visit clinic to have deliveries continue

costs are inevitably at retail price and therefore higher. It imposes an intermediate level of burdens on recipients. It handles the full range of foods, suffers occasionally from stock-outs, and suffers more frequently from unauthorized food substitutions. It is compatible with delivery of nutrition education and encouragement of utilization of medical services if participants must visit the clinic to obtain vouchers.

CHAPTER I

INTRODUCTION

The Special Supplemental Food Program for Women, Infants, and Children (WIC) is a nutrition supplementation activity for low-income pregnant and nursing mothers and young children. Under its provisions, persons judged to be "at nutritional risk" by medical or nutritional professionals due to low-income and patterns of inadequate nutrition are eligible to receive free each month about $20 worth of high-protein, high-mineral, and high-vitamin foods. WIC programs are run by medical clinics and in a medical orientation. The Food and Nutrition Service of the United States Department of Agriculture provides grants to departments of health (or equivalent agencies) in each state or to Indian tribes to administer the program. WIC was first authorized on an experimental basis in 1972 by amendment of Section 17 of the Child Nutrition Act of 1966. Public Law 94-105, enacted in October 1975 extended the program through fiscal year 1978 at an annual budget of $250 million.

The first operating WIC clinic opened its doors in Pineville, Kentucky on January 15, 1974. Two years later, this clinic is one of over 325 WIC programs serving about 635,000 participants nationwide. This set of currently-operating programs offers examples of many different ways to implement the WIC concept. Some programs utilize retail stores as the means of distributing food, while others use dairy home delivery, and still others operate through direct commodity distribution. Some programs investigate applicants extensively for income and medical need, while others pay attention mainly to one criterion or the other, and still others invest little effort in recipient certification of any kind. Clinics differ in the amount and nature of outreach, the quantity and style of nutrition education, the size and composition of their staff, and the pattern and amounts of foods distributed.

Such diversity is the key to the evaluation work reported in this document. In April and May of 1975, a stratified random sample of 96 WIC clinics was visited.[1] They were from 60 WIC program areas in 30 states or jurisdictions and had all been

---

[1] The survey was designed by the Technical Analysis Division of the National Bureau of Standards, United States Department of Commerce, and it was conducted by Associate Control Research and Analysis, Inc. The Urban Institute served as a consultant to these organizations and then performed analysis of the survey data to produce this report.

in operation between 8 and 15 months. Structured interviews were obtained from administrators at the state office, program area office, and clinic levels of administration, and from approximately 40 participants at each clinic. This sample represented approximately 15 percent of operating WIC programs and about one-half of one percent of WIC participants. Clinics were selected to exemplify as much variation as possible, both in terms of the precedures and policies which they had adopted and in terms of the environment in which they worked (region of the county where they were located, the ethnic groups they served, and so forth).

By systematically comparing the effects--the benefits and the costs--of different ways to perform the same mission, we are able to obtain insight into which ways of implementing WIC work better than others. This report discusses the survey, our analyses, and conclusions based thereon. The objective throughout is to synthesize the experiences of many alternative ways to administer WIC, so that the range of allowable implementation can be focused on those alternatives which are most efficient and effective.

In April 1975, WIC was being operated under Public Law 92-433 (passed in September 1972) and Public Law 93-105 (passed in November 1973), plus regulations issued in December 1974. By April 1976--the date of this report--legislation enacted in October 1975 and regulations issued in January 1976 have modified some circumstances. In some cases, these changes were reactions to areas of controversy discussed in the report. The reader should keep in mind that profile material in this report reflects practices as of April 1975; where appropriate, we will comment on changes occurring since then.

THE WIC PROGRAM IN BRIEF

The target population of WIC is pregnant women, lactating women, women up to six months postpartum, infants (from birth to 12 months of age), and children (from their first to their fourth birthdays)[2] who are determined by medical professionals to be at nutritional risk because of inadequate nutrition and income. The WIC program therefore is not a general "welfare" program available to all poor people; participation depends upon medical condition of nutritional risk, of which low income may be only one contributing factor. Clinics vary widely, however, in how they define nutritional risk (in terms of medical or income

[2]The upper age limit was four years as of the time of the survey in April 1975; it was extended to five years in the Child Nutrition Act Amendments of 1975.

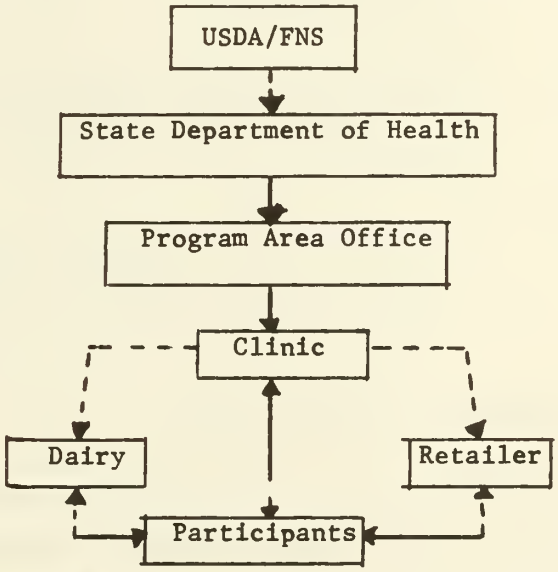
conditions) and how extensively they investigate these characteristics of participants.

Unlike the Food Stamp program, which allows participants freedom of choice in selecting their food, the WIC program makes available only specific foods. WIC-authorized foods consist of:

for infants	for women and children
iron-fortified formula	milk or cheese
infant cereal	cereal
fruit juices	fruit juices
	eggs

Also unlike the Food Stamp program, which requires the participant to purchase stamps at a price below face value, the WIC program is free of charge to the participant. The food distributed monthly to a participant carries a retail price of about $20. Regulations require that the WIC clinic tailor the amount of food each participant receives to that person's individual need for supplementary nutrition; however, as we shall see later in this report, virtually all clinics simply distribute the maximum allotment to every participant.

The following diagram represents the administrative structure and the flow of funds and services of the WIC programs. In the survey, interviews were conducted at all levels below FNS itself.



A program area is a WIC administrative unit covering a geographical area. The program area contains at least one clinic offering the WIC program. A program area might be "The Elm County Health Department," or "The Louisiana Statewide WIC program," or "The University Hospital." A clinic is an individual health unit within a program area. For example, "The 12th Street Clinic" might be a

clinic within the "Elm County Health Department" program area. Sometimes, programs and clinics have the same name, and sometimes they are even located in the same facility. A WIC clinic operates within what is called in this report a "host" health clinic; "The 12th Street Clinic" in the above example might be a full-range outpatient health clinic of the Elm County Health Department, and WIC would be only one of many medical activities conducted there.

A participant is a person who receives food through the WIC program. In cases where the participant is an infant or child, the mother or guardian was the interviewee in the participant survey; otherwise, the interviewee was the recipient herself. A non-participant is a person who is told by the clinic that she or her child is eligible for WIC but voluntarily chooses not to participate Nonparticipants were interviewed to find out why they had declined to participate.

One major focus of this study is to evaluate the relative cost, effectiveness, and satisfaction associated with the various food distribution systems developed locally. There are three general types of delivery systems for WIC foods:

1. retail purchase - Under this type of system, the participant receives a voucher from the clinic which she then redeems for her WIC foods at a retail food store.

2. home delivery - A commercial dairy delivers WIC foods to recipients' homes at specified intervals. Home delivery systems may utilize vouchers or they may not.

3. direct distribution - Under this system, the participant comes to the clinic (or a warehouse-type facility operated by the clinic) to pick up her foods. In no system included in our sample was a voucher used in the distribution system.

As these descriptions indicate, a voucher is often a central mechanism in the transaction and reimbursement systems used at WIC clinics. In this report, a voucher is defined as a certificate which entitled a WIC participant to receive WIC foods; WIC clinics present vouchers to participants and participants present them to food vendors (retail stores or home-delivery dairies). Vouchers may be negotiable instruments which food vendors redeem by depositing like ordinary bank checks, or they may be internal record forms which retailers present to WIC offices for reimbursement.

The above categories of distribution systems are used throughout our analysis, but they suppress some important complexities. Some of the clinics in the sample use variations on these three systems or use some of these systems in combination. For example, milk and eggs may be delivered to recipients' homes, while cereals and juices may be obtained at retail stores. The decision as to which kind of distribution system a clinic uses may be made at the state, the program area, or the clinic level.

WIC programs vary in size, in internal organization, in length of time in operation, and in method of distributing the food to recipients. Some are located in urban areas and serve a population within narrow geographical boundaries; others stretch across 10 or 12 counties or across an entire state. Furthermore, in the spirit of the WIC program as a demonstration project, WIC administrators at the state and local levels have been allowed by USDA to adopt a wide variety of alternative policies or procedures.

WIC programs even vary in terms of where in the administrative hierarchy a decision is made. In one state, the state WIC office may set eligibility criteria for WIC participation, while in a neighboring state, each program area may be free to select its own criteria, and in a third state, some or all program areas may allow discretion to be exercised by individual WIC clinics. The survey gathered information on policies from all levels of the administrative hierarchy, so that responses could be reported from whichever level had actually made the decision and could provide the best information.

One primary federal role in the WIC program is to provide funding. The federal government reimburses all food costs, and it provides an additional 20 percent of food costs as an administrative fee.[3] A second federal role is to provide general guidance for program operations. Primary operational responsibility for the program, however, is exercised by the states and localities.

SOME CLINIC CHARACTERISTICS

The sites involved in this study represent a "stratified random sample" selected by the National Bureau of Standards after considering a number of

---

[3] At the time of the survey in April 1975, the reimbursement for administrative expenses averaged 17 percent of food costs and was composed of an "administrative fee" of 10 percent and a "clinic cost reimbursement" which averaged seven percent The two categories for administrative reimbursement were combined and the total was raised to 20 percent of food costs by the Child Nutrition Act Amendments, passed in October 1975.

clinic variables--region of the county, rural or urban location, food distribution system, caseload, and type of recipients served. The sample included 96 clinics and the 30 state offices and 60 program area offices associated with them Interviews also were obtained from 3,597 participants and recent former participants, an average of 38 at each clinic. The remainder of this chapter profiles the sample of clinics which was involved in the survey.

One determinant of how WIC programs are designed and how they operate is what decision-makers believe the objective of the program to be. It is therefore appropriate to begin a profile of WIC clinics with the following table, which indicates the proportion of WIC administrators at state, program area, and clinic levels agreeing to various statements as objectives of the WIC program:

Possible Objectives for the WIC Program	Percent of Administrators in Sample Saying it is an Objective
Feeding and nutrition	95%
Brain development	77
Preventive health care	76
Nutrition education	59
Income supplementation	25
Other	23

(based on 180 administrators at all levels)

Ninety-five percent of administrators felt that feeding and nutrition was an objective of the WIC program; about 75 percent felt that brain development and preventive health care were objectives. Fifty-nine percent agreed that nutrition education was an objective, while 25 percent agreed to income supplementation as a goal.

Many of the specific policy decisions which we will discuss throughout this report reflect these objectives in action. We shall see, for example, these administrators' belief that nutrition education is a WIC objective reflected in substantial nutrition education programs even in the period prior to federal funding of nutrition education. We shall see the emphasis on preventive health care reflected in gains in the utilization of medical services by WIC recipients compared to similar persons not served by WIC. We shall also see ways in which the program is treated by administrators and participants as income supplementation.

The next key variable to be profiled is the method of physically distributing food. The following table indicates the proportion of clinics in the sample participating in each of the three main modes of distribution:

Food Distribution System	Percent of Sample Clinics
Retail purchase only	65%
Home delivery only	17
Retail purchase and home delivery	8
Direct distribution only	7
Home delivery and direct distribution	3
Retail purchase and direct distribution	0
Total	100%

(based on 96 clinics)

Seventy-three percent of clinics in the sample utilized the retail purchase method, either exclusively or in combination with home delivery. Twenty-eight percent of clinics operated via home delivery, either in pure form or in combination with retail purchase or direct distribution. Ten percent of clinics offered food through direct distribution, either in pure form or in combination with home delivery. It should be noted that when clinics operate mixed delivery systems, the mix is that some foods are delivered one way and other foods another. In our sample, we never observed that a clinic mixed operations by delivering foods to some recipients by one mode and to others by a different mode.

There is variation also in the nature of the health clinic hosting a WIC clinic. Sixty-one percent of the clinics in the sample were operated by city or county health departments. Thirty-two percent were operated by private, nonprofit health agencies, and the remaining seven percent were associated with hospitals, either public or private. Three clinics in the sample were hosted by the United States Public Health Service hospitals serving American Indians on reservations.

The clinic sample was drawn to include examples from all five Food and Nutrition Service administrative regions, as the following table indicates:

Food and Nutrition Service Administrative Region	Percent of Sample Clinics
Northeast[4]	32%
Midwest	19
West Central	18
Western	17
Southeast	13
Total	100%

(based on 96 clinics)

[4] After the survey in April 1975, The Northeast Region was subdivided into a New England Region and a Mid Atlantic Region. Because the two were operated as one region at the time of the survey, all results are reported for the combined region.

The study also sought to cover a wide variety of rural and urban settings within these regions. The following table indicates the locational distribution in the sample.

Location	Percent of Sample Clinics
Rural (population less than 10,000)	10%
Small Metropolitan Area (population 10,000 to 50,000)	30
Medium Metropolitan Area (population 50,000 to 250,000)	23
Large Metropolitan Area (population over 250,000	37
Total	100%

(based on 96 clinics)

Finally, our sample sought to include a broad range of clinic sizes, as indicated by WIC authorized caseload.

Authorized Caseload	Percent of Clinics
<200	19%
200-1000	58
>1000	23
Total	100%

(based on 96 clinics)

While about 20 percent of clinics had authorized caseloads of fewer than 200 recipients and about 20 percent had authorized caseloads of over 1000 recipients, about 60 percent of clinics were designed for the size range 200 to 1000 recipients. The number of recipients receiving food or vouchers at the average clinic in the sample on a typical operating day was 50; this value ranged in the sample from one to 250.

ORGANIZATION OF THIS REPORT

Many of the characteristics of clinics can be thought of as design choices. Who sponsors a clinic, what type of personnel staff it, where it is located, how large it is, and how it operates must all be decided. Design choices also arise on more detailed matters, such as what hours a clinic stayed open or which of several alternative foods are offered. Choices made on each of these questions in turn affect the efficiency, effectiveness, and nature of the WIC program.

The remainder of this report presents our findings about what choices WIC programs in operation actually have made and what conclusions can be drawn about the effects of those choices. Chapter 2 discusses the characteristics

of persons participating in the WIC program at the 96 clinics. It also analyzes the eligibility rules and outreach policies which affect this profile. Chapter 3 examines the foods being distributed through the clinics and administrators' and participants' reactions to them. Chapter 4 investigates the effects of the WIC program on the nutrition education which participants receive and the medical care services they utilize. Chapter 5 analyzes the cost of operating WIC programs and the reimbursement which the federal government provides to cover these costs. Finally, Chapter 6 discusses a variety of detailed operational policies and procedures adopted by WIC programs--from the design of vouchers to the division of responsibility among various administrative offices--and their influence on recipient satisfaction and on program efficiency and effectiveness. An appendix to the report describes the technical details of how the clinic and participant samples were selected and how the survey was conducted.

CHAPTER 2

WIC PARTICIPANTS

In the words of its original enabling legislation, WIC is a "program under which supplemental foods will be made available to pregnant or lactating mothers and to infants determined by competent professionals to be nutritional risks because of inadequate nutrition and inadequate income."[1] The subject of this chapter is the personal characteristics of WIC participants.[2] We profile characteristics of the 3,597 participant households which were sampled at 96 surveyed clinics.[3] We also describe and analyze clinic policies and practices directly related to participation, namely, eligibility criteria and outreach activities.

A major purpose of the chapter is to determine the extent to which the profile of participants is influenced by policies and practices which clinics choose to implement. A second purpose is to see if certain policies are typically associated with clinic characteristics such as clinic location, sponsorship, and food delivery system. As a final topic, we describe the overlap of participation in WIC and other clinic-operated nutrition programs and with the Food Stamp Program.

---

[1] Public Law 92-433, 42 USC 1771 Section 9.

[2] Since the survey upon which our study is based did not sample households not participating in WIC (except for a small sample of voluntary non-participants), we cannot assess program coverage--the ratio of recipients to potential recipients in the clinic area.

[3] This set of 3,597 households included 3,218 households with at least one member currently in WIC and 379 households with at least one former WIC participant. The participant data which follow pertain to the subset of these households which responded to the question under consideration; this subset--or the subset of administrative interview data used in a data table--is indicated in the line "based on _____" at the foot of tables.

PARTICIPANT CHARACTERISTICS AND ELIGIBILITY RULES

There are five main types of eligibility criteria which clinics use to screen potential participants: residence, categorical, income, medical, and health clinic participation. Residence means that a participant must live in the geographic area served by the health clinic. Categorical rules refer to which eligible groups (women, infants, or children) a clinic serves. The other three types of criteria are used by clinics to screen individuals within the set of clients served. The following table indicates the extent to which clinics utilize each of these latter three criteria explicitly in their process of participant screening.

Criteria for Participant Eligibility	Percent of Clinics
Income Only	2%
Medical Only	11
Clinic Participation Only	13
Income and Medical	17
Income and Clinic Participation	11
Medical and Clinic Participation	11
Income, Medical, and Clinic Participation	35
Total (based on 91 clinics)	100%

About one-third of clinics use all three criteria. Thirteen percent only require clinic participation, 11 percent only require medical conditions, and only two percent of clinics use income as the sole criterion for eligibility. The remaining 39 percent use two of these three criteria.

We will now examine each screening device in detail, along with participant characteristics that appear to have been influenced by them.

Residence as an Eligibility Criterion

In order to be eligible for WIC, a household must reside within the geographical area which a WIC program is authorized to serve. Sixty percent of sampled WIC clinics reported that they took precautions to ensure that recipients reside within their service areas, while 40 percent reported that they did not; it is not known what these precautions involved. Fifty-six percent of sampled clinics reported that they took precautions against their participants enrolling in more than one of their clinics, while

31 percent reported that they did not, and 13 percent reported that they did not need to do so because there was only one clinic in their area. Typically, the precaution consisted of maintaining a centralized list of all participants in a program area.

Categorical Eligibility Rules

As its acronym implies, WIC legislation provides that participation is to be limited to pregnant and lactating women, infants (birth to first birthday) and children until their fourth birthday.[4] The distribution of the participant sample among these categories is shown in the following table:

Category	Percent of Participants
Infants	31%
Children:	
1 year old	21%
2 year old	19
3 year old	14
4 year old or older	2
Total	56%
Women:	
Pregnant	11%
Lactating	2
Total	13%
Total (based on 3,592 participants)	100%

The table shows that 31 percent of the WIC recipients were infants, 56 percent were children, and 13 percent were pregnant or lactating women. Within the category of women, 69 percent were adults and 31 percent were teenagers (less than age 20).

[4] Subsequent to the survey in April 1975, the Child Nutrition Act amendments of 1975 raised the maximum age to the fifth birthday. The small proportion--two percent--of recipients in our sample who were age 4 or older when we sampled them were former participants who, presumably, were under 4 while on WIC. Throughout this report, we will discuss in terms of the four-year old cutoff in effect at the time of the survey.

Some perspective on these proportions can be obtained by thinking of one pregnancy passing through the full cycle of the WIC program. The child could render his mother eligible for WIC for perhaps eight months on average, counting both pregnancy and postpartum time.[5] Then the child himself would be eligible for a maximum of 12 months as an infant and up to 36 months as a child. A sample such as ours, drawn from these 56 person-months of eligibility, would thus have the probability of selecting an adult woman 14 percent of the time, an infant 21 percent and a child 64 percent of the time. While these probabilities are only approximate, it is nevertheless interesting to compare these proportions to the proportion of WIC recipients in the sample. Such a comparison indicates that while adult women are present in approximately the expected proportions (13 percent, versus an expected 14 percent), infants are "overrepresented" (30 percent rather than an expected 22 percent), and children are "underrepresented" (56 percent rather than an expected 64 percent).

Such discrepancies can be looked at in light of clinic policies regarding categories of recipients. The following table indicates the categories clinics serve:

Category	Percent of Clinics
Women Only	3%
Infants Only	7
Children Only	1
Infants and Children Only	6
Women, Infants, and Children	83
Total (based on 96 clinics)	100%

Over 80 percent of clinics serve all three categories of recipients; the remainder specialize by serving only one or two groups. Ninety-six percent of the sample clinics serve infants, while only 90 percent serve children. This partially explains the higher relative portion of infants in the sample.

One in five clinics have policies regarding which types of recipients are enrolled in WIC first if the number of applicants exceeds the available

[5] As will be seen later, there is some variation among clinics as to when mothers are deemed ineligible after the child is born.

caseload. There is little agreement among these clinics as to which category deserves highest priority. Of eleven clinics indicating which category they give highest priority, seven clinics mentioned women, one infants, and three children.

A final clinic policy influencing categorical profiles relates to pregnant and lactating women. The following tables indicate the variation among clinics as to the point of pregnancy at which women are placed on WIC and the point during lactation that women are removed:

Pregnant Women are Put on WIC	Percent of Clinics
Immediately upon determination of pregnancy	99%
No earlier than the second trimester	1
Total	100%
(based on 80 clinics)	

Lactating Women are Taken Off WIC	
When woman stops lactating	24%
When woman stops lactating, but no later than one year after birth	18
When baby is specific age less than one year	19
When baby is one year	27
Other	12
Total	100%
(based on 78 clinics)	

In terms of when women are put on WIC, there is near unanimity among clinics that pregnant women are to be placed on WIC immediately upon finding that they are pregnant. As to when lactating women are taken off WIC, some clinics relate the decision to the age of the baby while others tie it to whether or not the mother is still lactating; and among age-based decisions, the cut-off age varies from clinic to clinic.

Income Eligibility

As indicated earlier, low income is posited in the WIC legislation as a cause of being at nutritional risk. Further specification of the intent to target on the low-income population is provided by regulations which require that WIC programs be hosted by health clinics which "provide health services ...to residents of an area in which a substantial proportion of the persons

have low incomes," where low income is defined as being below the Census poverty threshold. Regulations also require that participants be "certified for treatment free or at less than the full charge customarily made for such services" by the host clinic or agency.[6]

The following table shows the distribution of annual incomes for households in the participant sample.[7]

Income	Percent of Households	Cumulative Percent
Less than $2,000	17%	17%
$2,000 - $3,999	29	46
$4,000 - $5,999	23	69
$6,000 - $9,999	22	91
$10,000 - $13,999	7	98
$14,000 - $18,000	2	100
Over $18,000	*	100
Total	100%	100%

(based on 2,898 participant households)

*Less than 0.5 percent.

Sixty-nine percent of WIC households reported annual incomes of less than $6,000 and 91 percent reported less than $10,000, leaving nine percent with incomes over $10,000. The median income was $4,338.

Further perspective on this income profile can be obtained from Exhibit 2.1, which compares the household income of WIC recipients to that of (1) all U.S. households in 1975, (2) a national sample of food stamp recipients, and (3) all U.S. households in poverty with one or more related children under age 18.

As expected, the graph shows that WIC households have much lower incomes than that of all households in the United States. The WIC median income is $4,338, which is $6,763 below the U.S. median income of $11,101. However,

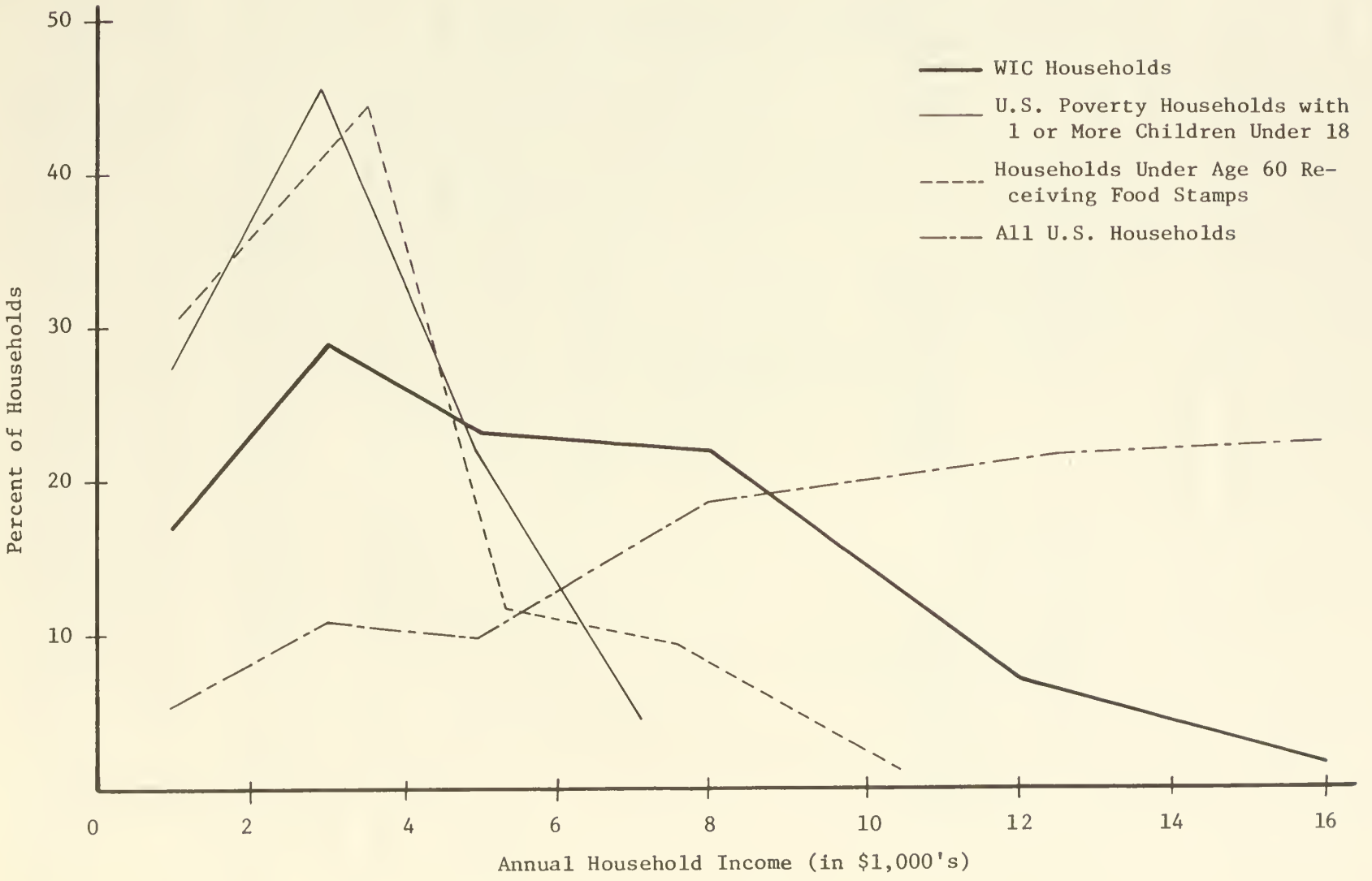
---

[6] WIC Regulations effective December 31, 1974, U.S. Department of Agriculture, Food and Nutrition Service, WIC Program Regulations, Sections 246.2(o), 246.5(a), and 246.12(b), (39 Federal Register, 44731).

[7] Income is defined as annual gross household income, including wages, salaries, commissions, tips, earnings from self-employment or odd jobs, child support, alimony, welfare, social security, pensions, and all other cash transfers.

Exhibit 2.1

Annual Household Income of WIC Recipients Compared
to Incomes of Other Household Groups



it is $1,403 above the median income of $2,935 for all U.S. families in poverty with one or more children under age 18.[8] Ninety-five percent of these poor U.S. households have incomes less than $6,000, compared to 69 percent for WIC recipients. The exhibit also reveals that the household income of WIC recipients is somewhat higher than that for households participating in the Food Stamp Program.[9]

A comparison of WIC recipients with the poverty population on an income basis is only exact if the distribution of family sizes of the two groups are similar, for family size is also a determinant of poverty level. The following table compares WIC household size with household size among poor U.S. families.

Number of Persons in Household	Percent of WIC Sample Households	Percent of U.S. Poor Households
1	*%	0%
2	8	33
3	22	19
4	24	17
5	16	12
6	11	8
7 or more	19	11
Total	100%	100%

(based on 3,597 participant households)

*Less than 0.5 percent.

In general, WIC households are larger than those of poor U.S. families.[10] The mean household size of the WIC sample is 4.7, compared to 3.9 for all poor families. Forty-six percent of WIC households included five or more members, compared to 31 percent for these poor U.S. households.

---

[8] Poverty is defined here using the census definition, i.e., the poverty line is scaled by family size, with the level being $5,038 for a family of four in 1974.

[9] Food Stamp data are from the Chilton Survey and are current as of July 1974. We restrict data to those under age 60 to increase comparability.

[10] This would be expected, in that WIC is a program for families with young children, while the comparison group of poor U.S. households includes families of all ages, including aged couples with no children.

A more exact comparison of WIC recipients with the poverty population can be made, however, by converting the incomes of WIC beneficiaries into "welfare ratios," which automatically account for family size. The welfare ratio is defined as the ratio of household dollar income to the poverty threshold for a family of that size. Thus, households with welfare ratios of 1.0 or less are in poverty, and those with ratios greater than 1.0 are not. The following table shows the distribution of WIC sample households in terms of their welfare ratio.

Welfare Ratio	Percent of WIC Households	Cumulative Percent of WIC Households
0 - .5	24%	24%
.5 - 1.0	41	65
		poverty threshold
1.0 - 1.5	16	81
1.5 - 2.0	9	90
2.0 - 2.5	7	97
2.5+	3	100
Total	100%	100%

(based on 2,898 participant households)

The average welfare ratio of the WIC households is 0.9, with 65 percent of the total sample falling below the poverty line. However, 35 percent are not in poverty, and 10 percent have welfare ratios of two or more. The data in the table thus support the earlier inference, drawn from income figures, that WIC participation is not tightly restricted to those in poverty.

This breadth of participant incomes leads us to look once again at the method of determining eligibility. As discussed at the start of this section, the WIC program implements the concept of income eligibility in terms of health clinics serving low-income populations and individuals eligible for free or reduced-price care at those clinics. There is no specific requirement in the regulations for explicit income screening of individuals by WIC itself. If the host health clinic does so for its treated population, then it will occur; but if the host health clinic does not, in principle it is not required for WIC clinics to do so.

While the interview data are sometimes confusing regarding income screening, the distribution of WIC clinic practices with respect to income tests, as we interpret it, is shown below.

Income Screening Criteria Utilized by WIC Clinics	Percent of Clinics
Have an explicit income test	59%
Have a variable, subjective income test	6
Have no income test	35
Total	100%

(based on 91 clinics)

Fifty-nine percent of the WIC clinics reported using household income as a condition for eligibility. Those income tests take one of two forms: tests imposed by another agency and tests imposed by the WIC clinics themselves. Regarding the former, some WIC programs only require that a person applying for WIC (1) be certified as eligible for free or subsidized health services by the host health clinic, or (2) be certified as eligible for benefits from certain other income-conditioned programs, such as Aid to Families with Dependent Children (AFDC) or the Food Stamp Program. Other WIC clinics in this 59 percent impose a separate income test of their own.[11] Six percent of the clinics report that they do some type of income screening, but that they do so without an explicit criterion. Instead, income eligibility is determined subjectively on a case-by-case basis.

The remaining 35 percent appear to have no income test. It is for this group that the data are difficult to interpret, however. Two-thirds of the WIC clinics in that 35 percent require participation in a health clinic, but there is no evidence that health clinic participants with high incomes are excluded from WIC. In some cases, health clinics give free or subsidized care to all who live in their area, regardless of the level of income. In other cases, health clinics may distinguish between high and low income families in terms of the cost of services, but the distinction is ignored by the WIC clinic. In other cases a distinction was probably made by the WIC clinic but not mentioned at the time of the survey. Therefore, there are WIC clinics which impose no income test for eligibility, although they probably make up less than the 35 percent reported in the above table.

---

[11] In this case and the one in which the WIC clinics rely on the host health clinics for income screening, the income eligibility cutoff is nearly always scaled by family size; only one example of a flat line cutoff, regardless of family size, was observed.

We now have two intriguing observations on WIC practices. One is that clinics vary in whether or not they screen participants on their income levels. The other is that a nontrivial proportion of WIC recipients are nonpoor. Are these two observations connected? Is absence of substantial income screening associated with participation by higher-income persons? The following table indicates the extent to which participation by households with incomes of $10,000 or higher is distributed among the clinics.

Percent of Participant Households with Income of $10,000 and Over	Percent of Clinics
0 percent	30%
1 - 15 percent	55
Over 15 percent	15
Total	100%
(based on 93 clinics)	

Thirty percent of the clinics served no households in that income range, and 55 percent served 15 percent or fewer; the majority of participant households with comparatively high incomes were found at the remaining 15 percent of clinics, in which over 15 percent of participating households had incomes of $10,000 or more; at the clinic with the highest proportion, 45 percent of households had incomes in that range.

The clinics with substantial numbers of participant households with incomes of $10,000 or more were scattered over all regions of the country, all rural/urban locations, all sponsors, and all distribution systems. The only characteristic they had in common was their policies on income screening. When statistical analysis was used to determine which variables are significant in targeting WIC participation on lower-income households, the results suggest that utilizing some type of income criteria lowers the clinic average household welfare ratio by .13, compared to doing no income screening at all. The regression equation underlying these results is presented in Technical note 1 at the end of this chapter. A reduction of .13 in the welfare ratio is equivalent to a 14 percent drop at the mean welfare ratio of .90, or about $650 in annual mean household income.[12]

[12]Several individual clinics in the sample used no income screening and yet all their participants were very low income. This occurred simply because the clinics served areas with only very low-income residents. Some of these

While this analysis suggests that the absence of an income test does result in higher average incomes of recipients at those clinics, the analysis is crude in that it groups together all clinics with an income test, making no distinction as to the level of income cutoff applied for eligibility determination. The survey obtained 17 examples of the income cutoff levels used by WIC clinics. Of these 17, which we do not necessarily purport to be a representative sample, the average maximum income eligibility level for a family of four was about $7,500, 150 percent of the Census poverty level (which is $5,038) for a family of that size.[13] However, there was considerable variation among the 17 clinics, with the family-of-four eligibility limit ranging from $4,380 to $12,000. With these limits it is not surprising to find considerable differences in income profiles among clinics, as well as a sizable number of nonpoor recipients in some clinics.

A final topic on the issue of income screening of participants is whether income eligibility is every rechecked once a participant has been admitted to the program. Research on low-income families shows that their incomes tend to fluctuate substantially over time.[14] The survey data gave no indication that any of the 96 clinics made income redeterminations once a person had been admitted to the program. In the new program regulations issued in January 1976 (after the survey), a requirement is imposed that recertification that a participant is "at nutritional risk" be done every six months.

---

clinics even reported that they performed income screening when the clinic first opened but abandoned the practice when, after several months, they never found anyone ineligible. This circumstance cannot be universally relied upon, however. For example, one clinic reported that they began without an income test, on the assumption that only very poor persons were using their host health clinic, a city health department clinic. They subsequently discovered that persons poor enough to be on public assistance received their medical care from private physicians who were paid by the welfare department, and that many city health clinic users were intact families with working husbands earning $7,000 to $10,000 per year. The WIC clinic then instituted an explicit income test for WIC eligibility.

[13] The income cutoff for a family of four to be eligible for food stamps is also in this range; the food stamp net income limit of $540 per month translates into a gross annual income of $8,000, assuming average deductions of 19 percent.

[14] See James N. Morgan, et al. Five Thousand American Families--Patterns of Economic Progress. Ann Arbor: Institute for Social Research, University of Michigan, 1974.

Medical Criteria

The basic definition of those for whom WIC is intended is that they be at nutritional risk. Exhibit 2.2 displays the definition of nutritional risk contained in WIC regulations.[15]

One method of determining nutritional risk is through explicit medical examination and laboratory testing. The following table indicates clinic practices with respect to medical examination which participants are required to undergo in determining WIC eligibility.

Medical Testing Required of WIC Recipients	Percent of Clinics
Laboratory medical tests	58%
Referral from medical professionals	3
Anthropometric measurement, diet information, or condition of pregnancy	13
None	26
Total	100%
(based on 94 clinics)	

Fifty-eight percent of WIC clinics require medical examinations to be performed. This set includes some clinics which require medical testing at the time of enrollment but do so largely to get information into their records rather than to use this information in selecting WIC participants. Three percent of clinics accept patients by referral from private physicians, requiring no further testing beyond whatever the private physician has performed. Thirteen percent of clinics determine WIC medical eligibility by examination of physical measurements, diet information, or other characteristics (for example, pregnancy) which do not necessarily require laboratory medical testing. Physical measurement typically includes height, weight, and, for infants, head circumferences. Ninety-four percent of clinics that serve infants routinely measure the head circumference of infants who are enrolling in WIC, compared to 39 percent of the relevant clinics who measure the head size of applicants who are children. Only four percent of the

[15] Forty-eight percent of state and program area administrators in the survey called lack of specific USDA guidelines for nutritional risk a "moderately serious" or "very serious" problem.

Exhibit 2.2

WIC Regulations--Definition of Nutritional Risk*

WIC regulations specify the following definition of nutritional risk:

> (p) "Nutritional risk" means one or more of the following:
>
> (1) For pregnant or lactating women--
>
> (i) Known inadequate nutritional patterns;
> (ii) High incidence of anemia;
> (iii) High rates of prematurity or miscarriage; or
> (iv) Inadequate patterns of growth (underweight, obesity, or stunting).
>
> (2) For infants and children--
>
> (i) Deficient patterns of growth (when compared to the standards for height and weight established by H. C. Stuart and published by Waldo E. Nelson, et al., in the Textbook of Pediatrics, 9th Edition, 1969, W. B. Saunders Co., Phil., Pa.);
> (ii) High incidence of nutritional anemia; or
> (iii) Known inadequate nutritional patterns.

*U.S. Dept. of Agriculture, Food & Nutrition Service, WIC Program Regulations, Section 246.2(p), (39 Federal Register, 44731).

clinics who serve women measure the head circumference of women applicants as part of their routine medical testing of WIC enrollees. Finally, a quarter of the clinics have no automatic medical examination requirements at all, though they may require it in individual cases.

The following table shows that about 90 percent of all clinics do initial hemoglobin and/or hematocrit testing on all three categories of WIC recipients. Some of these clinics also do follow-up or retests.

	Percent of Clinics Testing		
	Women	Infants	Children
Initial hemoglobin/hematocrit testing	92%	89%	91%

(based on 72 to 83 clinics, depending on the category)

The WIC program apparently has had some influence on the medical testing policies of clinics. Nearly 60 percent of the clinics report doing lab tests and anthropometric tests more frequently because of WIC, and nearly half of the clinics report doing more diet and allergy testing than they had prior to WIC:

Frequency of Tests Without WIC	Lab Tests	Anthropometric Tests	Diet or Allergy History
Tests would be done less frequently or not all	59%	58%	47%
Tests would be done with the same frequency or more	33	34	32
Other	8	8	21
Total	100%	100%	100%

(based on 87 clinics)

The statistical analysis referred to earlier, regarding the effect of income tests on the income profiles of recipients, also studied the effect that required medical examination had on income characteristics of participants.[16] Results indicate that clinics using some type of medical conditions for eligibility have a mean clinic welfare ratio .13 higher than clinics not using medical eligibility criteria. This is equivalent to about $650 in mean household income. Apparently, the effect of careful medical screening is to

[16] See Technical Note 1 at end of this chapter.

focus attention on medical evidence of nutritional risk, with relatively less emphasis on the role of low income per se in causing "nutritional risk."

Finally, clinics differ in the extent to which they allow recipients to continue on the WIC program if the recipient is enrolled because of some specific medical condition and that initial condition becomes cured. The following table indicates that 72 percent of the clinics allow the recipient to remain on the WIC program, while 23 percent terminate the enrollment.

Patient Eligibility When Initial Medical Condition Is No Longer Present	Percent of Clinics
Leave patient on the WIC program	72%
Take patient off the WIC program	23
Varies, case by case	5
Total	100%
(based on 79 clinics)	

Clinic Participation as a Requirement for Eligibility

As mentioned earlier, WIC regulations require that potential enrollees be eligible for medical treatment at free or reduced price at the sponsoring medical clinic. This condition does not specifically require that recipients actively participate in the clinic. Seventy percent of the clinic sample, however, do impose that additional stipulation. At these clinics, persons participating in WIC must enroll in either prenatal clinics or well-child clinics, as appropriate.

Again, the effects of this eligibility criterion on whom clinics serve was tested in the previously-mentioned statistical analyses. Results indicate that requiring health clinic participation tends to lower the average clinic welfare ratio by .16, corresponding to a decrease of about $800 in mean family income.[17,18]

---

[17] In Chapter IV, we shall see that requiring participation in the health clinic also has a favorable effect on the amount of medical care utilized by WIC recipients.

[18] We would caution, however, not to place too much confidence in the magnitude of this result. As mentioned previously, there is a subset of WIC clinics which require health clinic participation but which reportedly have no income criteria for eligibility, either based on certification by the health clinic or by the WIC clinic itself. To the extent that some of these health clinics

Other Participant Characteristics

As the appendix to this report discusses in detail, the 3,597 participant households profiled in this report are not a random sample of all current WIC recipients; rather they are a random sample of participants at the 96 WIC clinics which were chosen for this study. Since that clinic sample was selected in part to give examples of clinics serving different ethnic groups, the ethnic distribution of the sample does not necessarily indicate the ethnic distribution being served by WIC clinics nationwide. The following table shows the proportion of each group in the sample.

Ethnic Group	Percent of Participant Sample
Black	40%
White	31
Spanish surname	22
American Indian	4
Mixed or other	3
Total	100%

(based on 3,596 participant households)

Perhaps more insight into the degree to which various ethnic groups are served is provided by the following table of the mixture of ethnic groups to be found at individual clinics.

Ethnic Groups Served by Clinics	Percent of Clinics
White and more than one minority	32%
White and black	29
Mixture of minorities but no white	11
White and Spanish	9
100% white	8
100% black	7
100% Indian	3
White and Indian	1
100% Spanish	0
Total	100%

(based on 89 clinics, excluding U.S. Caribbean possessions; data are based on participant responses, not clinic reports.)

use income screening for participation which was not reported to us by the WIC clinics, then this variable may be picking up some of the effects of an income test.

As can be seen, the participant sample shows considerable variation among clinics in the ethnic groups served. Typically, 100% black clinics are rural clinics in the South, and 100% white clinics are rural clinics outside the South. The 100% Indian clinics are those operated on reservations by the Indian Health Service. Mixed clinics occur in a wide variety of settings throughout the country, with the proportions of various groups in the mixture ranging widely.

Regional location of clinics was another variable where the proportions in the sample do not reflect a national profile but instead reflect a sampling strategy which insured representation from all five Food and Nutrition Service administrative regions.[19] The following table shows the resulting distribution of sampled households.

FNS Region	Percent of Participant Sample
Northeast	33%
South	15
Midwest	20
West Central	16
West	16
Total	100%
(based on 3,597 participant households)	

Over one-third of sampled clinics are in the Northeast region, with the remainder distributed approximately evenly among the other four regions.

Within each region, households are found in a variety of locations. The following table displays the distribution of locale for the sample.

[19] Nationwide, WIC is (since September 1975) operational in every state of the union (except Utah) plus Puerto Rico and the Virgin Islands (included in the Northeast region). After our survey in April 1975, the Northeast region was split into a Mid-Atlantic Region and a New England Region; all data in this report refer to the former combined regions.

Location	Percent of Participant Sample
Rural	24%
Small cities (population 10,000-50,000)	19
Medium-sized cities (population 50,000-250,000)	22
Large cities (population over 250,000)	35
Total	100%

(based on 3,587 participant households)

Forty-three percent of the WIC sample was made up of households headed by a female. The following table shows the proportion of poor families in the WIC sample which are female-headed compared to the proportion of all poor families in the U.S. which are female-headed. To increase the extent to which the groups are comparable, we look at the subgroups of the two populations matched by age and race.

Race of Household Head	Proportion of Families Which Are Female-Headed			
	Poor Families with Household Head Less than 25		Poor Families with Household Head Age 25-34	
	U.S.	WIC	U.S.	WIC
Black	78%	84%	81%	70%
White	49%	45%	54%	39%

(based on 3,297 participant households)

The figures show that, while WIC is serving proportionately more female heads among black households with a head less than age 25, proportionately less female heads are participating in WIC among both white subgroups and in the black subgroup with heads age 25-34. Apparently, WIC does not have eligibility criteria or outreach policies which militate against participation by male-headed families, as is the case in some other income-conditioned programs such as Aid to Families with Dependent Children (AFDC).

Since low income is often associated with low educational attainment, the education levels of household heads in the WIC sample may be expected to be lower than in the entire U.S. population. This is confirmed by comparing the first two columns in the table below.

Education Level of Household Head	Percent of WIC Households	Percent of U.S. Households, Head Under 65	Percent of Poor WIC Households, Head Under 65	Percent of Poor U.S. Households, Head Under 65
8 years or fewer	23%	22%	25%	42%
Some high school	34	20	37	26
High school graduate	35	32	31	22
Beyond high school	8	26	7	10
Total	100%	100%	100%	100%

(based on 3,592 participant households)

Fifty-seven percent of the heads of the WIC sample of households had completed less than 12 years of education, compared with 42 percent of all U.S. households with a head less than age 65. The mean educational achievement of the head of household in the sample was 10.2 years, while the mean educational achievement of the person in the household who usually purchases and prepares food was 10.3 years.

It is also of interest to compare the distribution of educational attainment among poor WIC households to the distribution among poor U.S. households, in order to shed some light on two competing hypotheses. One is that the education levels of poor WIC participants will be higher than for poor eligible nonparticipants, all else held constant, because better-educated persons are more likely to hear about the program and to become enrolled. The competing hypothesis is that education levels of participants will be lower than for eligible nonparticipants because the better educated are more likely to be only temporarily poor and therefore less needy (because they can draw on past savings). They may, therefore, not bother going through the application process, or, to the extent there is a time lag between being eligible and learning of the existence of the program, their incomes may have risen above eligibility levels before they find out about the program.

Unfortunately, an exact comparison between poor WIC households and poor U.S. households who would be eligible for WIC cannot be made. In the table above we therefore compare education levels of heads less than age 65 for both poor WIC households (column 3) and poor U.S. households (column 4). The most interesting finding is that only 25 percent of WIC heads had less

than nine years of schooling, compared to 42 percent for nonaged heads in the poor U.S. population. Some disparity would be expected because, on average, WIC heads are younger and therefore better educated. Nonetheless, the difference is strikingly large. This may lend support to the first hypothesis above, namely, that the poorly educated are less likely to hear about WIC and to become enrolled.

Two final, related participant characteristics which reflect the nature of the WIC program are age of household head and number of children in households. The following table displays the age distribution of heads of households of all WIC recipients, poor WIC recipients, and all poor U.S. households.

Age of Household Head	Percent of All WIC Households	Percent of Poor WIC Households	Percent of All Poor U.S. Households
14-24	30%	33%	14%
25-34	40	36	23
35-44	17	18	19
45-54	8	8	14
55+	5	5	30
Total	100%	100%	100%

(based on 3,539 participant households)

As a program focusing on families with pregnant women or young children, it is to be expected that the age of household heads for WIC households would be less than for the U.S. poor as a whole. The data confirm this. The average age of a WIC household is 31.4, compared with 41.7 for all poor U.S. households. Sixty-nine percent of the heads of poor WIC households are less than age 35, compared to 37 percent for all U.S. poor.

We might also expect that many households will have multiple members eligible for WIC. The figures in the next table indicate that a third of the recipient households had more than one member on WIC at the time of the survey. There was an average of 1.46 WIC recipients per household in the sample.

Number of Members in Household on WIC	Percent of Households
1	64%
2	29
3	6
4	1
5	*
Total	100%

*Less than 0.5 percent

(based on 3,218 participant households)

Clinic Characteristics Influencing Eligibility Rules

Just as some of the characteristics of the participant households vary by clinic eligibility rules, these eligibility rules may vary by such clinic characteristics as sponsorship and location. The following table shows the relationship between clinic characteristics and the eligibility criteria which the clinic employs.

Characteristic	Percent of These Clinics That Have Income Criteria	Percent of These Clinics That Have Medical Conditions	Percent of These Clinics That Require Clinic Participation
Sponsor:			
Hospital	67%	86%	43%
City or county health department	63	70	74
Private, nonprofit health organization	70	80	67
Location:			
Rural	38%	89%	56%
Small cities	73	79	61
Medium-size cities	86	95	67
Large cities	51	57	80

(based on 90-94 clinics, depending on category)

The figures indicate that hospitals relied less on clinic participation for WIC eligibility than either city/county health departments or private, non-profit clinics. City/county health clinics relied slightly less on income tests and medical conditions and more on clinic participation than the other two types of sponsors; however, these differences were not large.

Regarding geographic location, the highest proportion of clinics using income and medical tests, and the second highest proportion requiring clinic participation, were those in medium-size cities. This may partially explain why such a relatively large proportion of the participants in medium-size metropolitan areas (72 percent) are poor. Rural clinics relied least on income tests to determine eligibility. This is reflected in the fact that rural areas have the smallest percentage (57 percent) of their participants below the poverty threshold.

OUTREACH EFFORTS AND THEIR EFFECTIVENESS

In the first part of this chapter we examined WIC participation in the context of eligibility rules. Since these rules are screening criteria applied to a potential WIC participant who is applying for the program, they are in a sense a passive aspect of clinic policies with regard to participation. They are used to screen out those for whom WIC is not intended. This section of the chapter examines the more active aspects of clinic policies relating to participation, namely, policies designed to recruit potential WIC recipients (outreach) and to ensure their continued participation (retention).

The following table presents administrators' estimates of the frequency of occurrence of various types of "underutilization" of WIC by recipients and potential recipients.

Aspect of Underutilization	Percent of Administrators Saying It Occurs: Very Frequently or Frequently	Occasionally	Not Very Frequently	Total
Recipients missing WIC appointments	30%	45%	25%	100%
Vouchers issued but not redeemed	13	37	50	100
Eligible persons dropping out of WIC	13	41	46	100
Eligible persons choosing not to enroll	4	11	85	100

(based on 79 state and program area administrators)

Thirty percent of administrators felt that recipients miss WIC appointments frequently or very frequently; thirteen percent felt that they frequently failed to redeem vouchers issued to them, and thirteen percent felt that eligible persons tend to drop out of the program frequently. Four percent of

administrators felt that eligible persons frequently fail to enroll in WIC when it is offered to them. It appears, therefore, that at least some participants and potential participants were not fully utilizing WIC services available to them. Policies of outreach to facilitate participation were administrators' responses to this situation.

Publicity Campaigns

In Chapter IV, we shall see that outreach activities claim about five percent of the administrative budget at an average WIC clinic, or one percent of its total operating budget including food costs.

One obvious form of outreach is formal publicity to let potential WIC enrollees know about the program. The following table indicates the degree to which various formal publicity channels are utilized by WIC clinics:

Publicity Method	Percent of Clinics Using
Host Clinic Staff Mentioning WIC (at clinic or during home visits)	99%
Posters/Displays/Booths in Public Places	87
Speakers at Meetings or Clubs	81
Advertisements in Local Newspapers or Newsletters	80
Leaflets	72
Advertisements or Articles in Professional Literature, Letters to Social Service or Health Professionals, Letters to Government Social Service or Health Agencies	69
Radio/Television (announcements, discussions, programs, news coverage)	67
Mailings (letters)	59
Recorded Phone Messages	6
Loudspeakers on Cars	1

(based on 89-96 clinics, depending on the publicity method)

Two-thirds of the clinics have made announcements about WIC on radio or television, with the number of announcements per 100 authorized participants varying from one to thirty-three. Many clinics also use mailings and leaflets; the extent varied from one to 465 letters per 100 authorized participants and from 10 to 1,333 leaflets per 100 participants, respectively. Nearly all clinics use other methods of publicity such as posters and displays, advertisements in local newspapers and in professional literature, speakers at meetings, and clinic staff mentioning WIC to health clinic recipients.

The next table shows the percent of participants who first learned about WIC by these various publicity methods.

Methods of Publicity	Percent of Participant Households
Staff at Health Clinic or other Medical or Social Service Professionals	55%
Acquaintances (either on WIC or not on WIC)	40
Posters/Displays at Clinic or Other Public Places	1
Radio, Television Announcements, News, or Discussion Programs	1
Local Newspaper or Community Newsletter (Ads or Articles)	1
Direct Mail or Door-to-door Leaflets	1
Recorded Phone Messages	0
Loudspeakers on Cars	*
Speakers at Meetings	*
Ads or Articles in Professional Literature/ Social Service Newsletter	*
Total	100%

*Less than 0.5 percent

(based on 3,571 participant households)

The figures indicate that 95 percent of the participants learned about WIC by one of two types of word of mouth communication: from friends or acquaintances, or from health or social service professionals such as the health clinic staff, social caseworkers, public health nurses, school nurses, and private physicians. Though they are widely used, all of the "mass audience" publicity methods together--media messages such as radio, television, newspapers, posters, pamphlets, and mailings--accounted for only five percent. Since these latter methods typically involve costs--of effort, at least, and usually of dollar outlays--the cost-effectiveness of such mass publicity approaches seems in doubt.[20]

Before reaching such a judgment, however, we should consider the characteristics of those five percent of participants brought in by these publicity methods. If they are particularly urgent cases, or persons who are otherwise difficult to reach, then mass media publicity campaigns may make up

[20]Several administrators asserted that mass publicity has a further disadvantage: It brings low-income people to the clinic demanding to be put on the WIC program who do not meet medical conditions for eligibility and who feel slighted when they are rejected.

in the "quality" of recruitment what they lack in quantity. Exhibit 2.3 offers data to investigate this point, to the extent that characteristics such as low welfare ratios or low educational levels represent either the degree of difficulty of reaching a recipient or the relative importance of her participation. It shows that participants with relatively low incomes or education levels were not more likely to have heard about WIC from mass media or other formal publicity than their higher-income or better-educated counterparts. Formal publicity of a mass distribution type thus seems to have little payoff, either in terms of reaching a large number of participants or in terms of reaching those of high priority.

Statistical analysis was employed in an attempt to further determine the impact of selected outreach policies on the percent of people who had heard about WIC through these methods. Technical Note 2 at the end of the chapter presents the "regression" analysis which was performed. Results indicated that there is no significant positive relation between the proportion of recipients who learned about WIC from TV and radio and their clinic's use of these publicity methods. The same held true for newspapers and newsletters. However, the analysis did show that the use of posters or displays is positively related with the percent of clinic participants that learned about WIC from "posters/displays."

Since word-of-mouth channels of communication seem to net a large proportion of WIC recipients, it is worthwhile to think about how these can be used most effectively. It is a simple and costless form of publicity to urge WIC participants to tell their similarly-situated friends about the program and to encourage them to apply. In addition, efforts to inform social service and health professionals about the program would seem to have positive payoff, since a large proportion of all WIC recipients hear about the program from professional referrals.

Initial Filling of Caseload

One measure of how effectively clinics recruit potential recipients is the rapidity with which they fill their authorized caseload. Exhibit 2.4 displays the time patterns of caseload filling of the sample clinics over the first year of operation, as a percent of the clinic's authorized caseload. The graph indicates that the average clinic takes until its third month of

Exhibit 2.3

Proportion of WIC Participants of Various Types Who First Heard About WIC From Different Sources

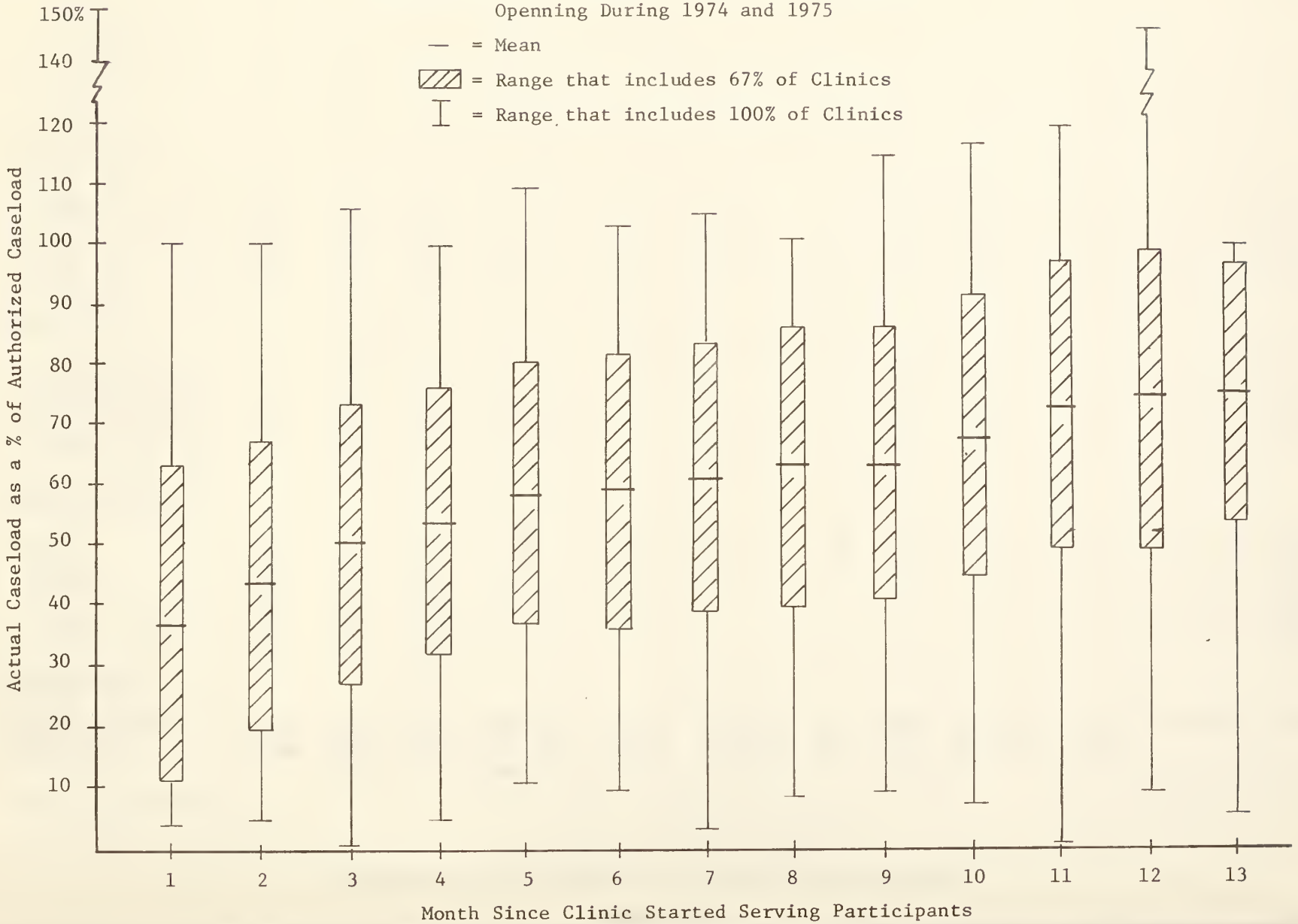
Participant Characteristics	Friends On WIC	Friends Not On WIC	Clinic Staff	Other Professional	Posters/ Displays at Clinic	Posters/ Displays Elsewhere	Radio TV	Local Newspaper	Community Meetings	Newsletters	Mailings	Total
Welfare Ratio												
0-.5	31%	10%	42%	13%	1%	*%	*%	1%	*%	0%	1%	100%
.5-1.0	31	13	41	11	*	*	1	1	*	*	1	100
1.0-1.5	29	13	46	8	1	1	*	*	*	*	*	100
1.5-2.0	30	11	45	11	0	1	1	1	0	0	0	100
2.0-2.5	36	14	37	10	0	*	1	1	0	0	1	100
2.5+	38	12	35	13	0	1	0	1	0	0	0	100
Education of Head of Household												
8 years or fewer	31	11	46	9	*	0	*	*	0	0	1	100
Some High School	29	9	46	11	1	*	1	1	0	*	1	100
High School Grad.	32	13	39	12	*	1	1	1	*	*	*	100
Education Beyond High School	31	14	39	11	1	1	1	1	1	0	0	100
Ethnic Group												
Amer. Ind.	26	12	34	26	1	0	0	1	0	0	0	100
Black	28	10	50	8	*	1	1	1	*	*	1	100
Spanish Surname	35	11	46	5	1	*	*	0	0	*	1	100
White	32	13	33	17	*	1	*	1	*	0	0	100
Mixed	30	11	48	9	1	0	0	*	0	1	0	100
Household Site												
Rural Area	35	16	35	12	*	*	*	1	0	0	1	100
Small Metropolitan Area	36	12	37	12	*	1	1	*	*	0	1	100
Medium Metropolitan Area	34	10	40	12	*	*	1	3	*	0	0	100
Large Metropolitan Area	24	9	55	9	1	1	*	*	*	*	1	100

Based on 2,835-3,513 participant households, depending on the category.

*Less than 0.5 percent.

Exhibit 2.4

Time-Pattern of Caseload Filling at 79 Clinics
Openning During 1974 and 1975



operation to fill half its authorized caseload and that by its twelfth month it has filled only 76 percent. There is, however, considerable variation among clinics, with some achieving full caseloads in their first month of operation and others being less than a quarter full at the end of their first year. In April 1975, 46 percent of the sample clinics had no waiting list of participants ready to be enrolled, while 54 percent did. At clinics which did have waiting lists, an average of 94 persons were on the list, and the waiting period averaged 34 days.[21]

Statistical analysis was used in an attempt to isolate the factors affecting the rapidity with which clinics fill their allotment levels.[22] It was hypothesized that how clinics let the public know of the existence of their program would be a significant determining factor. Analyses were run using the ratio of actual to authorized caseloads after one month of operation and after six months of operation. Results indicate that there is no significant relationship between the use of various outreach models (radio and TV, mailings and leaflets, posters and displays) and the ratio of actual to authorized caseload. Clinic location is the only significant determinant of the ratio showing that big-city clinics are slowest in enrolling potential WIC participants.

Specific Barriers to Participation

Though we have spent considerable attention on analyzing its effects, publicity is not the only outreach factor affecting participation. Perhaps of greater importance are clinic actions and attitudes which assist potential recipients in dealing with specific difficulties they encounter in participating in the WIC program. These may be thought of as clinic actions which lower the cost (both financial and psychic) associated with participation.

---

[21] In January 1975, authority to shift caseloads among WIC programs was delegated by USDA to the states. The change had little time to affect much by the time of our survey in April 1975, but in the future it will probably reduce what appear to be imbalances between authorized caseloads and ability to use those authorizations.

[22] See Technical Note 3 for the regression analysis underlying the conclusions in this paragraph.

One set of evidence on the nature of participants' difficulties in receiving WIC benefits is that from responses by 141 women surveyed who were offered WIC benefits for themselves and/or their children and who declined to participate.[23] Exhibit 2.5 shows the reasons they cited for not accepting the program, displayed in relation to the household income of the respondents. Fifty percent of the reasons given were miscellaneous or not readily interpreted; these are not displayed. The other half, however, fell systematically into two categories. One category--which we have labelled "stigma"--includes such answers as "don't need the help" or "do not want to be on welfare." The other set, labelled "specific barriers to participation," includes: lack of transportation; too much time, effort, or expense to travel to the clinic; absence or expense of child care; and inconvenience of clinic hours.[24] The important point to be found in Exhibit 2.5 is the relationship

---

[23] As the following table shows, many WIC program area administrators felt that dropping out and failure to enroll by WIC eligibles were at least occasional occurrences.

Frequency	Percent of Program Area Administrators: Eligibles Dropping Out	Eligibles Choosing Not to Enroll
Very Frequently or Frequently	15%	6%
Occasionally or Not Very Frequently	62	36
Almost Never	23	58
Total	100%	100%

(based on 50 program areas)

Similarly, administrators at WIC clinics reported the following as sources of hesitation to enroll among potential participants:

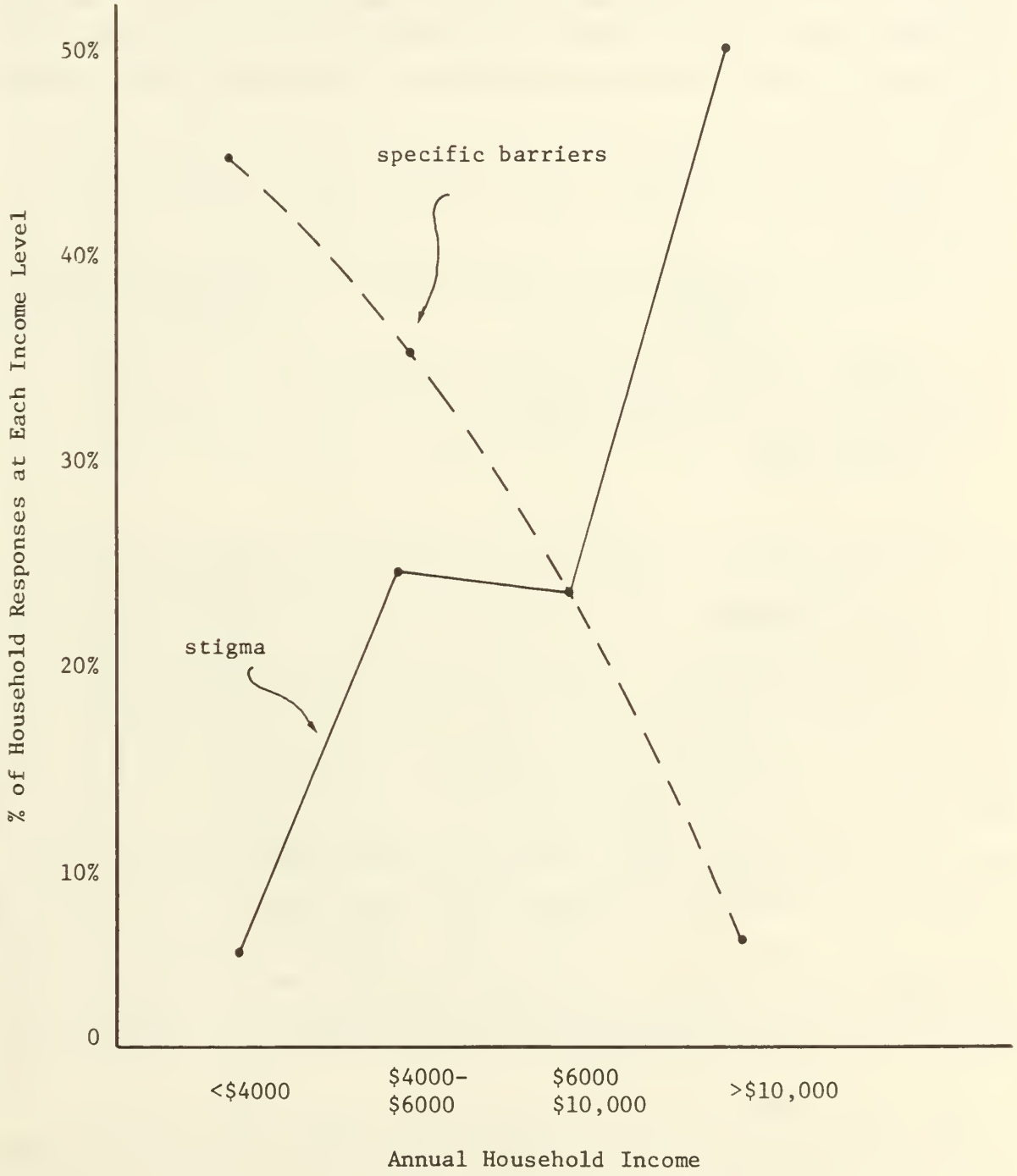
Source of Hesitation	Percent of Clinics
Social stigma of participation	19%
Leery of new, unstable government program	11
Fear that welfare payments would be reduced	10
Dislike of being checked on	9
Fear of medical tests	5
Other	11

(based on 94 clinics)

[24] Chapter V includes a section entitled "Recipient Satisfaction and Burdens" which presents detailed data on time and costs to participate in WIC.

Exhibit 2.5

Reasons Given for Nonparticipation in WIC
By Potential Recipients Who Declined
To Join WIC When It Was Offered



between these two types of responses and the household income of respondents. Those households most likely to decline because of the stigma associated with the WIC program tend to be higher income households. "Specific barriers to participation," on the other hand, seem to have precisely the opposite effect. These impediments to participation hit hardest and most frequently among the poorest, and therefore presumably the most needy, potential WIC recipients. This suggests that action to remove such barriers could be an important part of a program to recruit and retain participants, particularly those with the lowest incomes.

The table below displays the proportion of clinics in the sample who have implemented policies which tend to minimize these specific barriers to participation.

Policy	Percent of Clinics
WIC visits are coscheduled with health clinic visits	81%
Clinics offer free transportation	53%
WIC clinics open evenings or weekends for food/ voucher pickup	11%

(based on 80-94 clinics, depending on the policy)

Over three-fourths of the clinics try to schedule WIC appointments to coincide with health appointments. As we shall see in Chapter V, the time and out-of-pocket cost of traveling to the WIC clinic can be substantial for at least some participants; for them, coscheduling of appointments substantially reduces the cost of participating. Slightly over half of the clinics also offer free transportation to WIC participants. Only 11 percent of the clinics offer weekend or evening hours for picking up food or vouchers, and clinics open during weekdays are often not open 40 hours a week; less than half of the clinics that are open on weekdays operate Monday through Friday, and 20 percent are open less than five days a month. The lack of evening or weekend hours seems to be a deterrent to participation for those who work full-time or attend school, or for those whose husband is the source of transportation to the clinic and he works full-time.

There are a number of other policies and practices which can also encourage participation or reduce the cost of participation in perhaps less obvious ways. These have to do with the ease with which those of poor education and low levels of literacy can participate in the program. Because of

the nature of WIC's target populations, more than a few WIC participants may have difficulty reading or in communicating in English, or in dealing unassisted with complex rules, procedures or forms.[25]

Adaption to the needs of such participants may take many forms. For example, 68 percent of clinics indicated that when a participant misses an appointment, they attempt to contact the person to inquire if she is having difficulty with the program.[26] Fifty-four percent of clinics have at least one staff member who speaks a foreign language commonly used by recipients. While Spanish was by far the most common foreign language in which clinics in the survey had to operate, a wide variety of other languages were required in some circumstances. These included Arabic, French (for migrants from Haiti), Slovak, and several dialects of Chinese.[27] Only eight percent of the clinics use pictures of foods on their vouchers and only six percent of clinics print vouchers in more than one language. Meaningful "outreach" in this context may then be less a matter of a separate activity, such as a publicity campaign, and more a style pervading many aspects of program operations, a style emphasizing assistance, simplicity, and good communication.

---

[25] Two WIC clinics in survey reported that they were serving pregnant or lactating women enrolled in schools for the mentally retarded. Difficulties in functioning are not limited to the mentally handicapped, however. A recent study performed by the University of Texas for the Department of Health, Education, and Welfare measured the ability of adults to handle chores of daily living, such as check writing, comparing prices in the supermarket, utilizing health services in their community, and following bus routes. The study concluded that about 20 percent of the adult U.S. population fell into the category of "adults who function with difficulty" with regard to these aspects of modern life. More relevant to the WIC population was their finding that over 40 percent of those with incomes below $5,000, or with less than a ninth grade education, or in households with eight or more members, or with a Spanish surname, fell into this category of "functioning with difficulty." [Norvell Norcutt, et al., "Adult Functional Competency: A Summary" (Austin: University of Texas, mimeograph, March, 1975.)]

[26] Of those clinics who contact participants if they miss appointments, 17 percent do so by mail, three percent do so by home visit, two percent do so by telephone, three percent use some other means of contact, and 75 percent use more than one means.

[27] Only one of the clinics which reported that they did not have anyone on the staff who spoke a foreign language indicated that such a person was needed for their recipients. In some cases, bilingual WIC recipients were used as translators.

PROGRAM OVERLAP

The characteristics of low-income and medical difficulties which bring recipients into the WIC program tend to make them eligible for other forms of medical, food, and income assistance programs operated by various government agencies. In this section we discuss the extent of joint participation between WIC and some of these other programs.

Clinic-Operated Programs

Forty-four percent of the health clinics hosting WIC clinics are currently involved in, or had previously operated, one or more food or vitamin supplement programs in addition to WIC. The following table lists the types of programs and the percent of clinics offering each:

Type of Program	Percent of Clinics
Vitamin or Mineral Supplements	27%
Infant Formula	9
Surplus Commodity Foods	4
Other Food Supplements	4
Emergency Food Service	2
Milk Station	2
Summer Food Program	2
Food Stamps	1
OEO Nutrition Program	1
(based on 96 clinics)	

About one-fourth of the clinics operate a vitamin or mineral supplement program, the most commonly-provided supplement being iron-fortified vitamins. Nine percent of the clinics offer an infant formula program.

Exhibit 2.6 shows the frequency with which clinics prescribe vitamin or mineral supplements for different categories of WIC participants, whether under one of these supplemental programs or as part of their own health care practices. The supplements are divided into three categories: 1) iron supplements; 2) other mineral supplements including fluoride; and 3) vitamins (typically multiple vitamins, B vitamins, vitamin C, prenatal vitamins, or folic acid).

About twice the number of clinics prescribed iron supplements and vitamins as prescribed other mineral supplements. There was little variation by type of recipient in the prescription for other mineral supplements--about 40 percent to all three groups. The proportion of clinics giving vitamins or

Exhibit 2.6

Clinic Practices in Prescribing Vitamin or

Mineral Supplements to WIC Participants

Prescribe Iron Supplement	Women	Infants	Children
Never prescribe	26%	16%	15%
Prescribe selectively	34	74	79
Prescribe routinely	40	10	6
Total	100%	100%	100%
Prescribe Other Mineral Supplements			
Never prescribe	60%	61%	54%
Prescribe selectively	18	31	43
Prescribe routinely	22	8	3
Total	100%	100%	100%
Prescribe Vitamins			
Never prescribe	26%	21%	19%
Prescribe selectively	41	66	69
Prescribe routinely	33	13	12
Total	100%	100%	100%

Based on between 68 and 76 clinics, depending on the category

iron supplements to women, infants, or children differs somewhat, however. Seventy-four percent of the clinics prescribed iron supplements to women, while about 85 percent prescribed them to infants and children. More clinics (about 80 percent) prescribed vitamins to infants and children than prescribed to women (74 percent). However, more clinics "routinely" prescribed vitamins and mineral supplements to women than to infants and children; 40 percent of clinics routinely prescribed iron supplements to women, while only 10 percent routinely prescribed them to infants and only six percent to children. This pattern also holds true for other mineral supplements and vitamins. Clinics apparently are more selective in the prescription of vitamins and mineral supplements to infants and children than to women, even though more clinics give them to infants and children than to women.

How does the overall amount of vitamins and mineral supplements prescribed with the WIC program compare with the amount that would be prescribed without WIC? Forty-two percent of the clinics said that the WIC program did not change the frequency of vitamin and mineral supplement prescriptions. Seventeen percent said they prescribed vitamins and mineral supplements more often with WIC, while 41 percent said they prescribed them less often with WIC.

Food Stamps

Forty-nine percent of all households in the WIC sample participate in the Food Stamp program, and half of those have been participating for a year or more. Two-thirds of the clinics have more than 30 percent of their WIC participants in the Food Stamp program, and only 10 percent of the clinics have none of their participants receiving food stamps. The following table shows participation by WIC recipients in the Food Stamp program, as a function of several clinic characteristics:

Clinic Characteristic	Percent of Clinic's WIC Recipients Participating in the Food Stamp Program: Clinics With Average Welfare Ratio < 1.0	Clinics With Average Welfare Ratio > 1.0
Sponsorship:		
Hospitals	68%	58%
City/County Health Dept.	49	39
Private Nonprofit	57	34
Location:		
Rural	45	13
Small Cities	48	39
Medium-Size Cities	62	47
Large Cities	54	45
Delivery System:		
Home Delivery	56	43
Retail Purchase	47	35
Direct Distribution	60	25
Mixed	71	55

(based on 90-93 clinics, depending on the category)

It was hypothesized that private, nonprofit clinics and those located in larger cities would have a higher proportion of their caseload receiving food stamps. The above table shows that these hypotheses are not supported by the data, however. Hospitals have a larger average percentage of their WIC participants receiving food stamps, regardless of clinic welfare ratio. City or county health department clinics and clinics located in rural areas have the smallest percentage of their WIC recipients receiving food stamps. And, of course, clinics with lower participant welfare ratios persistently have a higher proportion of participants receiving food stamps.

School Breakfast and School Lunch

Forty-five percent of households in the sample had one or more children enrolled in kindergarten or grades one through twelve and therefore potentially enrolled in the USDA's School Breakfast and School Lunch Programs if they were operating at their schools. Thirty-eight percent of the households in the sample had one or more children enrolled in those grades and being served lunch at school, while eight percent had one or more children enrolled and being served breakfast at school. Thirty-one percent of the households in the sample had one or more children enrolled in these grades and being served

lunch at school either free or at reduced price (twenty cents per meal or less); seven percent of households had a child enrolled in these grades and being served breakfast either free or at reduced price (ten cents or less).

CONCLUSIONS

It is important to the fundamental concept of WIC that participation be targeted upon those at nutritional risk by virtue of low income and other conditions. A central hypothesis of this chapter has been that the extent to which this targeting is achieved is not a circumstance of change but rather the result of clinic policies which screen out ineligibles on the one hand and encourage participation of eligibles on the other.

The analysis presented in this chapter has shown the following effects of clinic policies:

1. The WIC program has not been confined solely to low-income women, infants and children. Though two-thirds of the survey sample are in households at or below the poverty threshold, a not negligible proportion of the other one-third appear to have relatively high incomes. This is allowable within current regulations, because explicit income condition is not required; it is not universally performed, and even when it is, it is often with relatively high cutoffs (such as one and a half times the Census poverty threshold).

2. Medical eligibility testing seems to refocus participation on those with medical problems regardless of incomes, unless counterbalanced by income testing.

3. Clinic participation requirements for eligibility seem to assist in targeting on low-income persons (as well as in promoting utilization of health clinics by WIC participants).

4. Mass publicity campaigns do not seem to have much direct impact on encouraging participation. Only a small proportion (five percent) of WIC participants first heard about WIC through these means, even though they were widely used. Nor does publicity seem to assist in the process of initially filling the caseload of clinics upon first opening. Most participants heard about WIC by word of mouth, both from health and social service professionals and from participants. Analysis tentatively indicates that emphasis should be placed on ensuring that the staff of other agencies that come in direct contact with low-income persons are aware of the existence of WIC and actively refer their applicants to the WIC clinic.

5. WIC participants--particularly those with lowest incomes--are sometimes prevented from participating by such barriers as lack of transportation, clinic hours during business hours only, and lack of child care. Removal of such barriers should be thought of as part of a meaningful outreach effort. Similarly, consciousness of the needs of low-education persons in designing forms, procedures, and rules might assist participation of persons who have difficulty in functioning in complex programs.

TECHNICAL NOTES

1. Regression analysis was used to examine the relationship between recipient income and clinic characteristics and policies. The mean welfare ratio of the clinic's participants was the dependent variable, and the following variables were independent variables:

   Clinic is located in a rural area (population under 10,000) - RURAL
   Clinic is located in a small metropolitan area (population 10,000 - 50,000) - SMALL
   Clinic is located in a medium-sized metropolitan area (population 50,000 - 250,000) - MEDIUM
   Clinic is sponsored by a hospital - HOSPITAL
   Clinic is sponsored by a private, nonprofit health clinic - PRIVATE
   Clinic distributes foods through home delivery - HOME
   Clinic distributes food through retail purchase - RETAIL
   Clinic directly distributes food - DIRECT
   Number of months a clinic had been in operation at the time of the interview - MONTH
   Clinic requires health clinic participation - PARTICIPATION
   Clinic uses some type of income criteria - INCOME
   Clinic has some type of medical criteria - MEDICAL

   Clinics sponsored by public health departments and clinics located in large metropolitan areas (population over 250,000) were the omitted categories for the first two sets of binary variables. All three distribution systems are included, since they are not mutually exclusive.

   The results are presented in the following table:

Variable Name	Regression Coefficient	t Statistic
PARTICIPATION	-.16	2.2
INCOME	-.13	1.9
MEDICAL	.13	1.5
RURAL	.06	0.5
SMALL	.11	1.3
MEDIUM	-.12	1.3
HOSPITAL	-.11	0.7
PRIVATE	-.01	0.1
HOME	-.07	0.6
RETAIL	-.07	0.5
DIRECT	-.18	1.1
MONTH	-.04	2.1
CONSTANT	1.56	

   $R^2 = .25$

   Coefficients show that the requirement of clinic participation lowers the average welfare ratio by .16; the use of income tests lowers the ratio by .13, and the use of medical tests raises the welfare ratio by .13. However, only the first is significant of the .05 level; the

other two are only significant at about the .10 and .15 level, respectively. None of the sponsorship or delivery system variables was significant at the .20 level, while two of the location variables (small and medium-size metropolitan areas) were significant (at the .20 level). Finally, length of time in operation was highly significant, showing that those clinics in operation longer had a lower-income clientele. We cannot tell whether this means that clinics which began operation first were in the lowest income areas or that the longer clinics are in operation, the more stringent their income criteria become.

2. Regression analysis was used to determine the impact of selected outreach methods on the percentage of participants who heard about WIC by radio and/or TV or from posters or displays. A regression was run using each of these as a dependent variable, with the following binary variables as independent variables:

    Clinic advertises WIC on the radio and/or TV - TV/RADIO
    Clinic advertises WIC by mailings and/or leaflets - LEAFLETS
    Clinic uses posters/displays to advertise WIC - POSTERS/DISPLAYS

    All other methods of publicity were included as part of the omitted category.

    The results of the regressions are shown in Exhibits N2.2A and N2.2B. In Exhibit N2.2A, the coefficient of TV/RADIO suggest some positive correlation between the use of radio and TV and the percent of WIC participants who heard about WIC from the radio or TV; however, the value of the t statistic shows it is only significantly different from zero at about the 0.5 level. None of the other dependent variables is significant at even the .40 level.

    In Exhibit N2.2B, the figures suggest that the percent of people who learned about WIC from posters or displays is positively correlated with clinic use of posters and displays and that this coefficient is significantly different from zero at the .05 level. The coefficients of the other selected methods of publicity are also significantly different from zero at the .05 level. These were included primarily as "control" variables, and one would expect their coefficients to be near zero (or negative to the extent that they are substitutes for posters and displays). The positive and significant coefficient on TV/RADIO is likely a spurious result.

3. Regression analysis was used to isolate the factors affecting the rapidity with which clinics fill their allotment levels. The ratios of actual to authorized caseloads after one month of operation and after six months of operation are regressed against the following binary variables:

    Clinic advertises WIC on the radio and/or TV - TV/RADIO
    Clinic advertises WIC by mailings and/or leaflets - LEAFLETS
    Clinic uses posters/displays to advertise WIC - POSTERS/DISPLAYS
    Clinic is sponsored by a hospital - HOSPITAL

Exhibit N2.2A

Multiple Regression Results for the Percent of Participants that Heard about WIC from RADIO/TV

Independent Variables	Coefficient	t Statistic
TV/RADIO	.28	0.8
LEAFLETS	.09	0.2
POSTERS/DISPLAYS	.42	1.0
CONSTANT	-.12	

R^2 = .15

Exhibit N2.2B

Multiple Regression Results for the Percent of Participants that Learned about WIC from POSTERS/DISPLAYS

Independent Variables	Coefficient	t Statistic
TV/RADIO	.79	2.5
LEAFLETS	-.81	2.1
POSTERS/DISPLAYS	.84	2.3
CONSTANT	.01	

R^2 = .38

Clinic is sponsored by a private, nonprofit center - PRIVATE
Clinic is located in a rural area - RURAL
Clinic is located in a small metropolitan area - SMALL
Clinic is located in a medium metropolitan area - MEDIUM
Clinic distributes foods through home delivery - HOME
Clinic distributes foods through retail purchase - RETAIL
Clinic directly distributes food - DIRECT

Other publicity methods, clinics sponsored by city or county health departments and clinics located in large metropolitan areas were the omitted categories.

The results of the regressions are shown in Exhibits N2.3A and N2.3B. In Exhibit N2.3A, clinic location is the only variable significantly different from zero at the .05 level. The coefficients on the location variables suggest that clinics in large metropolitan areas are the slowest in enrolling potential WIC participants at start-up. The use of direct distribution is positively correlated with the ratio of an actual caseload after one month of operation and significantly different from zero at about the .20 level. Use of various publicity methods is significant only at the .40 level.

Exhibit N2.3B shows the regression results for the ratio of actual to authorized caseload after six months of operation. The three location variables and the distribution of foods by home delivery are all significantly different from zero at the .05 level. The coefficients indicate that clinics in large metropolitan areas are still lagging behind clinics in other locations after six months. Results also suggest that clinics using home delivery are slower than other clinics in reaching allotment levels. None of the publicity variables are both significant and of the correct sign (positive). The negative, significant coefficient in the case of the use of leaflets is likely a spurious result.

Exhibit N2.3A

Multiple Regression on the Ratio of Actual to Authorized Caseloads

After Six Months of Operation

Independent Variables	Coefficient	t Statistic
TV/RADIO	5.78	0.9
LEAFLETS	-6.74	0.9
POSTERS/DISPLAYS	4.56	0.6
HOSPITAL	-7.68	0.7
PRIVATE	-4.32	0.6
RURAL	24.46	2.1
SMALL	2.11	0.3
MEDIUM	32.99	4.3
HOME	7.47	0.8
RETAIL	16.45	0.8
DIRECT	17.68	1.3
CONSTANT	10.68	

$R^2 = .60$

Exhibit N2.3B

Multiple Regression on the Ratio of Actual to Authorized Caseloads

After Six Months of Operation

Independent Variables	Coefficient	t Statistic
TV/RADIO	-5.93	1.2
LEAFLETS	-10.78	1.7
POSTERS/DISPLAYS	2.62	0.5
HOSPITAL	-9.47	1.0
PRIVATE	4.86	0.9
RURAL	18.36	2.1
SMALL	13.52	2.3
MEDIUM	37.48	6.5
HOME	-15.06	2.2
RETAIL	-6.68	0.7
DIRECT	-6.83	.6
CONSTANT	64.24	

$R^2 = .69$

CHAPTER 3

WIC FOODS

One of the most important characteristics of the WIC program is its focus on foods of high nutritional content. The legislation creating WIC in 1972 specified that the program was to distribute

> ... those foods containing nutrients known to be lacking in the diets of populations at nutritional risk, and, in particular, those foods and food products containing high-quality protein, iron, calcium, vitamin A, and vitamin C.[1]

Exhibit 3.1 displays the kinds and amounts of foods authorized by the USDA to implement this mandate as of April 1975, the time of the survey.[2] Two food packages are set forth: one for infants (birth to first birthday), the other for both children (first to fourth birthday) and pregnant or lactating women. As can be seen, the infant food package is composed of infant cereal, juice, and infant formula (with milk allowed as a substitute for up to 50 percent of the formula after the age of six months). The child and adult package contains milk (or cheese as a milk substitute), eggs, and specific cereals and juices.

States, program areas, and clinics participating in WIC are not required to offer all authorized foods; however, each clinic must offer a set of foods which contain at least one from each category of foods allowed for participants they serve. WIC regulations further specify that foods must be authorized to each participant by a competent professional in accordance with each individual's needs. Periodic reference to Exhibit 3.1 may help keep the reader oriented during the discussion which follows. The topics covered in this chapter are: (1) the overall workability of these food

---

[1] Public Law 92-433, 42 USC 1771 Section 9.

[2] Lists of food acceptable under WIC program regulations were first issued in August 1973 and revised in March 1974, June 1974, and February 1975. Exhibit 3.1 is based on those set forth in February 1975. In January 1976, further food regulations expanded this list; these recent changes are noted throughout the chapter where appropriate.

Exhibit 3.1

Foods Authorized by USDA for WIC Distribution

(Rules in Effect from February 1975 to December 1975)[1]

Food Category	Maximum Amount Per Month - Infants	Maximum Amount Per Month - Children & Pregnant/Lactating Women	Authorized Brands or Types
Iron-fortified infant formula	31 - 13 fl. oz. cans of concentrated liquid (or equivalent amounts of dry or ready-to-feed)	____	Enfamil with iron[2], Similac with iron[3], SMA with iron[4] — regular milk based Soyalac[5], I-Soyalac[5], Prosobee[2], Isomil[3], Neo-Mull-Soy[6], Nursoy[4] — soy-based Lofenalac[2], Nutramigen[2], Pregestimil[2] — special milk-based
Milk Products[7]			
*Whole fluid milk or *Evaporated milk or *Dry whole milk	For infants 6 months or older, equivalent amounts of starred milk products may be substituted for up to 15 cans of concentrated liquid formula	31 fluid quarts[8] 31 - 13 fl. oz. cans 10 - 1 lb. packages[9]	____
Skim or low-fat fluid milk or Dry nonfat milk	____ ____	31 fluid quarts 6.2 lbs.	
Cheese	____	10 lbs.	Swiss, natural cheddar or pasteurized process American

Exhibit 3.1 (cont'd.)

Food Category	Maximum Amount Per Month - Infants	Maximum Amount Per Month - Children & Pregnant/Lactating Women	Authorized Brands or Types
Eggs[7]			
Fresh eggs or Powdered eggs	———	2 1/2 dozen 2 lbs.	——— ———
Juice	2 - 46 fl. oz. cans or 15 - 4.2 fl. oz. cans	———	Orange Grapefruit Orange-grapefruit blend Any infant juice Dole frozen pineapple Guava
		6 - 46 fl. oz. cans	Orange Grapefruit Orange-grapefruit blend Dole frozen pineapple Campbell's Home Style tomato Guava
Cereal			
Infant	3 - 8 oz. packages	———	Any infant cereal
Regular	———	4 - 8 oz. packages	Product 19[10] Kellogg's Concentrate[10] Total or Corn Total[11] King Vitaman[12]

Source: WIC Program Regulations (39 Federal Register 44738) and USDA lists.

Exhibit 3.1 (cont'd.)

Footnotes

[1]The list was expanded in January 1976 to allow buttermilk, goat's milk, and flavored milk; colby and Monterey Jack cheese; and Cream of Wheat, Malt-o-Meal, BucWheats, and Kaboom cereals.

[2]Manufactured by Mead/Johnson

[3]Manufactured by Ross Laboratories

[4]Manufactured by Wyeth

[5]Manufactured by Loma Linda

[6]Manufactured by Syntex

[7]Combinations of items within this category are allowed, so long as the total amount does not exceed the equivalent of the total allowed for one item.

[8]In January 1976, the milk allowance for women and children was reduced to 28 quarts per month, and revised to allow milk to be substituted for 100 percent of formula for infants six months or older.

[9]Alaska, Puerto Rico, and Virgin Islands only

[10]Manufactured by Kellogg's

[11]Manufactured by General Mills

[12]Manufactured by Quaker Oats

provisions, from the point of view of both WIC administrators and recipients (2) areas of controversy or difficulty concerning each food item; and (3) administrators' and recipients' views on possible changes in food regulations.

OVERALL WORKABILITY

By and large, administrators across the country are establishing food policies consistent with the letter and spirit of WIC food regulations. They find it administratively feasible to do so, and they also find that the foods are acceptable to the majority of WIC participants.

Exhibit 3.2 presents a tabulation of foods actually being distributed by the 96 clinics sampled in our survey, with the foods divided into those authorized by the USDA regulations (as shown in Exhibit 3.1) and those not authorized. Each of the foods authorized by the USDA is offered by at least some clinics. Common foods (e.g., fluid milk, orange juice, and fresh eggs) are offered by a great majority of clinics, while foods selected to meet comparatively infrequent but specific needs (e.g. dry milk, and powdered eggs) are offered by fewer clinics. Our survey also detected distribution of some food items not allowable under USDA regulations, such as unauthorized types of cereals and infant formulas. The extent of such distribution was typically infrequent, and when a difference of practice from regulation was widespread--as in the case of regular cereals--the food items being distributed were logically related to the nutritional intent of the WIC program. These cases are discussed in detail later in this chapter.

Exhibit 3.3 profiles recipients' reports of what food items they are receiving from WIC. Approximately 40 percent of households reported receiving infant items such as infant cereal and formula, while approximately 70 percent reported receiving child and adult items such as cereal, milk, eggs, and cheese. These proportions are consistent with the observation in Chapter 2 that 31 percent of the participant sample was infants because some WIC households contained both infant recipients and child/adult recipients.

One reason administrators are able to implement USDA food regulations successfully is that WIC participants appear in general contented with foods they are receiving. Although WIC distributes relatively large quantities of only a few types of foods, the majority of recipients seem to find the

Exhibit 3.2

Foods Offered by a Sample of 96 WIC Clinics in April, 1975

Food	Foods Authorized by USDA	Percent of Clinics Offering the Food[1]	Foods Not Authorized by USDA	Percent of Clinics Offering the Food[1]
Iron-fortified infant formula	Soy-based	88%	Advanced (Ross Laboratories)	4%
	Liquid milk-based	79%	Evaporated milk, plus iron drops	4%
	Powdered milk-based	55%	MBF (meat based)	4%
			Baker Infant Formula[2] (Baker BeechNut)	2%
			Infant formula without iron, plus iron drops	2%
			Ensure (Ross Laboratories)	1%
			Goat's milk	1%
			Concentrated half and half	1%
			Whole fluid milk to infants<6 mos.	1%
Milk Products				
Milk	Whole fluid milk	81%	Goat's milk	1%
	Skim or low-fat milk	73%		
	Evaporated milk	63%		
	Dry nonfat milk	55%		
	Dry whole milk	1%		
Cheese	Pasteurized process American	71%	Other cheese	3%
	Natural cheddar	66%	Colby	2%
	Swiss	20%		

Exhibit 3.2 (cont'd.)

Food	Percent of Clinics Offering the Food[1]			
	Foods Authorized by USDA		Foods Not Authorized by USDA	
Eggs	Fresh	90%		
	Powdered	9%	———	
Juice	Orange	94%	Grape	8%
	Infant juices	74%	Cranberry	2%
	Grapefruit or orange/ grapefruit blend	72%	Prune	1%
			V-8 (Campbell's)	1%
	Campbell's Home Style tomato	33%	Del Monte Pineapple	1%
	Dole's frozen pineapple	30%		
	Guava	3%		

Exhibit 3.2 (cont'd.)

Food	Foods Authorized by USDA	Percent of Clinics Offering the Food[1]	Foods Not Authorized by USDA	Percent of Clinics Offering the Food[1]
Cereal				
Infant	Rice infant cereal	94%	Regular cereal given to infants	2%
	Oatmeal infant cereal	91%	Farina	1%
	High protein infant cereal	70%		
	Barley infant cereal	70%		
	Mixed infant cereal	67%		
	Fruit infant cereal	49%		
	Wheat infant cereal	39%		
	Other infant cereal	25%		
Regular (for children and women)	Total or Corn Total	93%	Cream of Wheat[2] (Nabisco)	47%
	Product 19	91%	Malt-O-Meal[2]	30%
	King Vitaman	76%	Raisin Bran[2] (Kellogg's, Gen. Foods)	24%
	Kellogg's Concentrate	65%	Fortified Oat Flakes (Gen. Foods)	10%
			BucWheats[2] (Gen. Mills)	8%
			40% Bran[2] (Kellogg's Gen Foods)	7%
			Oatmeal	6%
			Special K (Kellogg's)	3%
			Wheaties (Gen. Mills)	3%
			Cornmeal	3%
			Grits	2%
			Farina	2%
			Wheatina (Standard Milling Co.)	2%
			Infant cereals given to children	2%
			Protein Plus	1%
			Kaboom[2] (Gen. Mills)	1%

[1]For infant items, this percent is the percent of clinics serving infants (92 clinics). For child and adult items, it is the percent of clinics serving children and adults (89 clinics). The total sample is 96 clinics.

[2]Item was authorized by USDA during some time period prior to February 1975.

Exhibit 3.3

Foods Received by Participant Households at 96 WIC Clinics in April 1975

Category	Item	Percent of Participant Households Receiving this Item
Infant Formula	Liquid concentrated	27%
	Liquid ready-to-feed	6%
	Powdered	2%
Milk Products	Fluid milk	68%
	Cheese	51%
	Evaporated milk	14%
	Powdered milk	6%
Eggs	--	68%
Juices	Canned regular	42%
	Canned infant	35%
	Frozen regular	24%
	Fresh regular	14%
Cereals	Regular (for children and adults)	70%
	Infant	40%

Based on 3,597 recipient households

foods usable and palatable. As we shall see throughout this chapter, most changes requested by participants take the form of minor adjustments in their current set of foods rather than basic rejection of the items. When the subject of food satisfaction was probed directly in the survey, recipients responded that WIC foods were:

	Percent of Respondents
Just exactly what they would like	23%
Pretty much what they would like	71%
Not really what they would like	5%
Not at all what they would like	1%
Total	100%

(based on 3,597 recipient households)

Thus, only six percent of all respondents expressed substantial dissatisfaction with the WIC foods in general, while 94% expressed satisfaction.[3]

Individual foods vary in popularity, of course. Exhibit 3.4 displays four alternative indices of recipient satisfaction with foods they are receiving. Two direct indicators of popularity are the frequency of mentions among users of the item when our survey elicited suggestions about increasing the amount of a food, and the frequency of mentions when suggestions were elicited to decrease amounts or drop foods. A third indicator is the proportion of food retailers reporting that participants asked for substitutes for the item when purchasing food with WIC vouchers. A fourth index is the proportion of recipients reporting that they usually have some of the item left over at the time they receive their next allotment.

In terms of popularity, the six foods in Exhibit 3.4 seem to fall into three categories of two foods each. Eggs and cheese belong together as popular, relatively complaint-free items. They are foods which are least likely to be left over, least likely to tempt recipients to seek substitutes, least likely to be mentioned as foods to be dropped, and most likely to be mentioned as foods to be increased.

---

[3] Technical Note 1 discusses possible biases of participant responses in a favorable direction, but suggests that this general conclusion still holds.

Exhibit 3.4

Four Indicators of the Relative Popularity of WIC Foods

Among Recipients at 96 WIC Clinics in April 1975

Food	Requests to increase the food (per hundred per households receiving the item)	Requests to decrease or drop the food (per hundred households receiving the item)	Proportion of retailers asked to make substitutions for the food	Proportion of households receiving the item who usually have it left at time to receive next allotment
Eggs	27	3	2%	7%
Cheese	13	5	3%	8%
Cereal	13	23	13%	13%
Juice	21	6	14%	11%
Formula	12	16	8%	20%
Milk	32	8	8%	17%

Based on 3,597 recipient households

Cereal and juice present a more mixed picture. Some indicators of popularity rate them quite highly, while others indicate dissatisfaction. As we shall see later in this chapter, this pattern represents general satisfaction with these types of food combined with desire for substitution among brands of flavors.

The third and final group, composed of formula and milk, also exhibit mixed indicators of popularity. We shall see in the detailed discussions of these foods that this pattern reflects widespread recipient satisfaction with the foods, combined with the existence of subgroups of recipients who have allergy or other individual problems with these foods.

In general, however, these indices demonstrate a pattern of overall satisfaction by recipients with the foods they are receiving. For example, the food most likely to be left over at the time to receive the next allotment --infant formula--is fully utilized by 80 percent of households receiving it, and only 16 percent of the households suggest decreasing the amount of formula or eliminating it altogether. Substitutions for juice--the item most likely to generate requests for retailers to make substitutions--was reported by only 14 percent of the retailers. Even the food most likely to elicit a request from using households to decrease or drop the food--cereals--only generated such requests from 23 percent of receiving households.

While satisfaction with the overall food package is high, there are nevertheless pockets of dissatisfaction and possible areas of improvement. We shall now discuss each food in the WIC package, taking them in the order listed in Exhibit 3.4.

TWO POPULAR FOODS

Eggs and cheese are the two most popular WIC foods. Administrators report few problems concerning these foods, and WIC participants like them. Issues surrounding eggs and cheese are few and are mentioned by only small proportions of administrators and participants.

Eggs

WIC regulations allow two and a half dozen fresh eggs (or two pounds of powdered eggs) per month for each woman and child in the program. Every clinic that serves either women or children is offering at least one form of eggs.

Participants seem more satisfied with eggs than any other WIC food. Exhibit 3.4 shows that fewer mentions were made of decreasing or dropping eggs than were made for any other food, and 93 percent of the participant households receiving eggs usually use all of the eggs before the next time they are to receive WIC foods.

The primary change in eggs suggested by administrators and participants was to increase the authorized quantity per month. Twenty-nine percent of participant households receiving eggs made this suggestion, as did four percent of WIC administrators. No WIC administrators and only three percent of households receiving eggs suggested decreasing or dropping the item.

Allergies to eggs were mentioned by six percent of clinic administrators, who indicated that the problem is experienced by from two to four percent of WIC participants in their clinics. This is a low rate of mention compared to, for example, mentions of milk allergies, and tends to indicate that the problem is relatively rare. In corroboration of this finding, no participant household complained of egg allergies.[4]

Another problem concerning eggs, mentioned by 23 percent of clinic administrators, was that of a mismatch between authorized quantities of eggs (two and a half dozen per month) and unit sizes available in some stores (only by the dozen). The same problem on size mismatch was mentioned to some extent for nearly all foods in the child's and adult food package (for cereal in 46 percent of clinics, for juice in 24 percent of clinics, and for milk in 15 percent of clinics). Administrative difficulties could be eased by requiring only that the quantity be matched on average over several time periods (or, in the case of cereals, juices, and milk, by stating authorized total quantities per month instead of specifying quantities by unit sizes).[5]

---

[4] Estimates of the occurrence of allergy problems among WIC participant households are based only on the number of mentions respondents made of allergies as their reason for requesting some change in WIC foods. This gives a lower rate of mentions of allergy problems than would have been obtained if participants had been asked directly if they had experienced allergic reactions; however, it does indicate the comparative extent of allergy problems among several foods.

[5] The food regulations of January 1976 restated cereal allotments in terms of total ounces per month.

A final minor difficulty with eggs concerned refrigeration. Eight percent of clinics surveyed offer eggs only in the powdered form, and problems of refrigerated storage is one reason they choose to offer eggs in this form. In direct distribution clinics, refrigerated storage at the clinic may be expensive or unavailable.[6] Refrigeration problems for recipients is another reason for offering eggs in this form. We will pursue this point further in our discussion of milk products.

Cheese

Cheese may be substituted for part or all of the milk offered to adults and children, at the rate of one pound of cheese per three quarts of milk. WIC regulations allow three types of cheese: natural cheddar, pasteurized process American, and Swiss.[7] Seventy-nine percent of clinics serving women or children utilize the option to substitute cheese for milk, with two-thirds of these clinics offering American and natural cheddar cheeses. Swiss cheese was offered by only 20 percent of clinics in the survey, and only a few clinics offered unauthorized types of cheese.

Only five percent of participant households receiving cheese indicated in the survey that they would like to drop it or decrease the amount they receive, and only three participants and one clinic mentioned allergies to cheese. This low rate of rejection is a product of both the popularity of cheese among those who receive it and of its status as an optional substitute item (so that those who dislike cheese can take milk instead). In comparison, 18 percent of households either requested increases in the amount of cheese or addition of cheese to their food package.

One implication of these results is that some participants in the 19 clinics currently not offering cheese would probably like to have it added as a WIC food. Of the clinics currently not offering cheese, the reasons

---

[6] Six of the eight clinics giving eggs only in powdered form are direct distribution clinics. The same clinics which offer only powdered eggs tend to distribute only evaporated or dry milk and to not offer cheese.

[7] In January 1976, colby and Monterey Jack cheese were added to the acceptable group.

mentioned were administrative convenience (63 percent of clinics), cost reduction (33 percent), and lack of recipient requests (32 percent).

TWO FOODS WHERE VARIETY IS AN ISSUE

For some WIC foods, certain varieties or types or brands are authorized while others are not. Though this selectivity may be justifiable on nutritional grounds, it is often associated with participant discontentment. Administrators are also eager to obtain some alterations in regulations regarding these same foods. The main food involved is cereals offered to children and adults ("regular" cereal). Cereals for infants exhibit the same pattern but to a lesser extent, as do juices for all age categories.

Regular Cereal

Exhibit 3.1 shows the selection of cereals which were authorized for children and adult women in April 1975: Product 19, Kellogg's Concentrate, Total, Corn Total, and King Vitaman. The single criterion required for a cereal to be authorized was that it contain 30 milligrams of iron per 100 grams of dry cereal. Each woman and child in WIC can receive up to four 8-ounce packages of cereal per month.

Exhibit 3.2 illustrates that some authorized cereals are offered more widely than others. Over 90 percent of clinics offer Total, Corn Total, or Product 19. Fewer clinics are offering King Vitaman and Kellogg's Concentrate. All administrators who indicated why they do not offer King Vitaman gave its high sugar content as the reason. For Kellogg's Concentrate, common reasons for not offering it were that it is not available from the distributor and that WIC recipients do not like it as well as other cereals being offered.

There are several indications that many participants do not particularly like the brands of cereals they are currently receiving. Thirteen percent of households receiving regular cereal have it left over at the time they are to receive their next WIC foods, and cereal was mentioned more frequently than any other food as one which participants would like to receive less of or drop from the WIC food package. More mentions were made of cereal than any other food as one that participants would like to replace with other foods; 461 respondents mentioned having cereal replaced compared to fewer

than 100 mentions made of replacing any other WIC food. Six percent of receiving households mentioned not liking the cereal as the reason for requesting changes in cereal, which was more than for all other reasons for requesting cereal changes combined.

WIC administrators concur with participants in advocating a greater variety of cereals in the food package. Perhaps the best indicator of their attitude is that 64 percent of clinics serving either women or children were offering unauthorized cereals. Exhibit 3.2 shows that they included both cereals that were once authorized by USDA and cereals that never were authorized.[8]

The reason given by clinic administrators for offering unauthorized cereals was that they feel that these cereals are as nutritionally good, or almost as good, as those currently authorized, and that participants liked these cereals much more than those currently authorized. Some pointed out that slightly lowering the USDA minimum of 30 milligrams of iron would expand the set of eligible cereals.

WIC administrators were particularly anxious to see that some hot cereals became authorized. Even though no hot cereals were currently approved, 60 percent of clinics serving women or children were offering at least one of these two hot cereals; and over half of the clinics which are violating the USDA rules by offering unauthorized cereals are doing so only to provide hot cereals.[9]

---

[8] The Food and Drug Administration issued regulations in 1973 which require that any food which has 45% or more of the USRDA of a nutrient added to the product must be called a "dietary supplement." In order to avoid this label, many cereal manufacturers reduced the iron content of their cereals to levels which fell below the WIC requirement of 30 milligrams per 100 grams of cereal. Consequently, many cereals which had been authorized for WIC during the early stages of the program were removed from the food package.

[9] In the regulations issued in January 1976, USDA reset this minimum to 28 milligrams per 100 grams. This added two hot cereals (Cream of Wheat and Malt-O-Meal) and two cold cereals (Kaboom and BucWheats) to the authorized set.

Infant Cereals

Current WIC regulations allow infants under one year to receive three 8-ounce packages a month of any type of infant cereal. Of those households receiving infant cereal, 83 percent are satisfied with the amount of infant cereal they currently receive, while seven percent would like to increase the amount and 10 percent would like to decrease it.

Infant dislike of these cereals to the point of refusal to eat them occurs infrequently. Three percent of survey clinics reported that some infants will not eat infant cereal, while about four percent of respondents from participant households receiving infant cereal mentioned infants not liking the cereal as reason for requesting some change in this food. Two percent of clinic administrators indicated that they allow regular cereal for infants who will not eat infant cereal, in an effort to maintain nutritional content of the food package. Four percent of clinics mentioned allergy problems with rice and wheat infant cereals, occurring in one to four percent of infants. Less than one percent of participant households receiving infant cereal mentioned allergies.

Juice

Juice offered through WIC, like infant cereals, engenders general satisfaction, some reported allergy problems, and some sentiment for receiving wider varieties. WIC regulations currently allow juices which contain at least 30 milligrams of vitamin C per 100 milliliters of juice. This nutritional requirement limits the selection of juices for adults, children, and infants to orange, grapefruit, orange-grapefruit blend, Dole frozen pineapple, and guava. Additionally, infants are authorized to receive any infant juice, and women and children may receive Campbell's Home Style tomato juice.

WIC administrators seemed more concerned with allergies to juice than did participants. Thirty-one percent of clinics mentioned that they had encountered allergies to juices among WIC participants. Twenty-five percent of clinics specifically mentioned citrus juices as the problem area. Most administrators say these problems occur for less than five percent of recipients. Less than one percent of respondents from participant households mentioned allergy problems.

WIC administrators do not think that offering a wider variety of juices is necessary to compensate for the allergy problem. For women and children allergic to citrus juices, two alternative juices are already in the WIC food packages--Dole pineapple and Campbell's Home Style tomato. Infants are allowed Dole pineapple juice and all infant juices, of which several are non-citric.

However, there is evidence of some demand for a wider variety of juices. Of WIC administrators at all levels (a total of 186) 10 percent mentioned wanting a wider variety of authorized juices. Also, nine percent of retailers said that WIC participants have mentioned wanting to add other fruit juices or fruit drinks to the food packages. The proportion of these participants wanting additional nutritious juices versus those wanting any fruit drink, nutrition aside, cannot be determined from our data. It is reasonable to surmise that it is some of each. Some participant requests for a wider variety of juices reflect a desire for fruit drinks, such as "Hawaiian Punch," or fruit flavored beverages, such as "Kool-Aid." In other cases, they reflect a desire simply for a broadening from the monotony of "orange juice every day." For such cases, a broader range of relatively nutritious alternatives would be welcomed by recipients.

TWO FOODS WHICH RAISE QUESTIONS OF FLEXIBILITY

In this section we discuss problems related to infant formula and milk. Again we must note that most administrators and participants are satisfied with these foods. However, these foods raise several issues which differ from those surrounding other WIC foods, most importantly, problems of allergies and other individual medical differences in food needs.

Infant Formula

WIC regulations in April 1975 allowed thirty-one 13-ounce cans of certain concentrated liquid, iron-fortified infant formula per month (or equivalent amounts of dry or ready-to-feed formula) for each infant in the program. Milk-based and soy-based formulas were allowed if they met the iron and calorie requirements specified in the regulations. At six months of age, whole fluid

milk or evaporated milk could be substituted for up to 50 percent of the infant formula allotment.[10]

Exhibit 3.2 showed that while most clinics offered both milk-based and soy-based authorized formulas, several authorized brands or types of formula were not offered by some clinics. Clinics in one state mentioned not offering Lofenalac because it is being supplied by the state in another feeding program. A small proportion of clinics offered some unauthorized formulas. Fifty-seven percent of the clinics indicated that they are not offering some authorized formulas because of excessive cost of the formulas, the primary objection being to ready-to-feed types of formula. One administrator commented that WIC families set an example for their neighbors and that, therefore WIC should avoid demonstrating the use of formulas which non-WIC families cannot afford. Other administrators offer ready-to-feed formula despite its higher cost. In some cases, they do so in response to specific difficulties which their participants have mixing concentrated formula, such as availability of pure water, mental retardation of the mother, or the mother's inability to understand label instructions written in English.

Allergies and Individual Health Problems

The issues concerning infant formula are allergy problems, controversy over the age of transition from infant's to children's foods, and whether administrators are varying the amount of food being offered to different WIC recipients. The common theme in all these issues is the lack of discretion allowed to clinic administrators to accommodate individuals' allergy and medical problems. Ninety-two percent of administrators at all levels (clinic, program, and state), felt that it would be advantageous to have such discretion, as shown in the following table.

---

[10] In Alaska, Puerto Rico, and the Virgin Islands, whole dry milk is also allowed as a formula substitute. In the revised regulations of January 1976, clinics were given discretion to substitute milk for 100% of the formula for infants six months or older.

Allow more substitution for allergy or unusual medical problems	Percent of Administrators
Advantage	92%
Not important	6%
Disadvantage	2%
Total	100%
(based on 186 administrators)	

A specific context in which this desire for more discretion arose--and by far the most frequently-mentioned problem with infant formula--was infants' allergies to, or intolerance of, milk-based formula. Administrators at 61 percent of clinics said they had encountered allergies to milk and milk-based formula. At those clinics, the problem typically arose in less than ten percent of WIC infants and young children:

Reported Frequency of Milk Intolerance	Percent of Clinics
Less than 1% of formula recipients	11%
1-5% of formula recipients	41%
6-10% of formula recipients	26%
Over 10% of formula recipients	22%
Total	100%
(based on 61 clinics reporting infant milk formula allergy problems)	

In addition to milk-allergy problems, 17 percent of clinics reported encountering intolerance of iron in the infant formula. Most administrators at these clinics reported that this problem occurs for between one and five percent of WIC infants.

Reported Frequency of Iron Intolerance	Percent of Clinics
1-5% of formula recipients	70%
6-10% of formula recipients	10%
Over 10% of formula recipients	20%
Total	100%
(based on 17 clinics reporting infant iron formula problems)	

As an alternative to offering iron-fortified formula, about six percent of clinics offered either evaporated milk or non-iron fortified formula supplemented with iron-drops.[11]

Participant data substantiated the extent of the problem as reported by administrators. Seven percent of respondents from participant households receiving formula mentioned allergy or intolerance as reasons for asking the clinic for some change in the formula. This was the reason mentioned most often for requesting changes. Allergy problems were reported more frequently with formula than with any other foods, by both administrators and participants.

Another individual health problem mentioned by four percent of clinics was excessive weight gain in some infants and children, for which the clinic staff prescribed the lower calorie Advance formula, an unauthorized substitution. This is another example of the sort of decision over which clinic administrators would like discretion to make medical decisions on an individual case basis.

Age of Transition to Children's Food

A second general issue for clinic administrators is the age at which infants are moved from the infant's to the children's food package. Infant formula was the food most frequently mentioned with respect to this issue, though giving regular cereal and eggs to infants was also occasionally mentioned. The current regulation is that children over one year cannot receive foods authorized for infants. However, 20 percent of clinics advocated that children be allowed to receive infant formula. This subdivides into 14 percent of all clinics already doing so in violation of WIC regulations and six percent who do not allow it but who stated that they would favor a change in regulations. The 14 percent of clinics allowing children to receive infant formula subdivides into 11 percent that do so in cases of allergy to milk and three percent who do so if a child is handicapped.

---

[11] One clinic said it took infants off the WIC program because of iron intolerance.

Regarding the age of transition from formula to milk, partial flexibility is allowed in substitution of milk for formula from six months of age to one year. While most clinics are taking advantage of this option, five percent specifically mentioned that they are not. Administrators at those clinics felt that formula is of greater nutritive value; as support for that position these administrators cited a 1970 statement by the American Academy of Pediatrics which encouraged pediatricians to prescribe iron fortified formula for as long as infants are bottle fed and as a beverage milk along with solid foods until the infant is at least a year old.

Participant opinions offered some support for the practice in most clinics of allowing milk as a substitute for part of the formula. Five percent of households receiving formula mentioned wanting to replace formula with milk, and an additional five percent reported they had already asked clinic staff to replace formula with another food. To these must be added some unknown number where infants were switched from formula to milk at the suggestion of clinic staff. These data seem to indicate that in those clinics not allowing substitution of milk for formula, at least some of the participants would approve of a change.

To summarize, WIC administrators at every level felt it would be advantageous if they had more flexibility in the age at which they moved infants from the infant to the children's food package. Eighty-five percent of these administrators felt this additional form of flexibility would be an advantage.

More Flexibility in the Age of Transition to Children's Food	Percent of Administrators
Advantage	85%
Not important	5%
Disadvantage	10%
Total	100%

(based on 186 administrators)

Varying the Amount of Food

WIC regulations specify only a maximum authorized quantity of food to be given to each category of WIC recipient. Regulations direct that program

medical staff must determine the need for nutritional supplementation of each WIC recipient and prescribe an amount of food, up to the authorized maximum, that is necessary to meet the individual's needs.

It seems that clinics typically are not adhering to this regulation. Instead, most clinics give the maximum allowable amount of food to each WIC participant. Only 24 percent of clinics said they vary the amount of food in individual cases, and none of these did so by formally determining individuals' needs. Instead, they typically made informal adjustments on standard allotments, for example, if a recipient reported that a certain food item was going to waste due to dislike or allergy. Another six percent of all clinics say they vary the amounts for all recipients based on doctors' opinions (e.g., they delay starting juices until infants are four months old). The remaining clinics simply allocate the maximum quantity to each WIC recipient.

One clear-cut example of where tailoring food allowances to individual requirements would be feasible is in the case of breast-fed infants. Thirty-one percent of clinics serving infants reported that breast-fed infants received the same amount of all foods, including formula, as bottle-fed infants, while 59 percent said they do not, and 10 percent of clinics reported that they sometimes do so.

It is interesting to contrast the policy of not exercising flexibility which is within their discretion to administrators' requests for increased flexibility in food decision-making. It appears that WIC exhibits in the mind of its administrators the same "dual personality" which characterizes other in-kind transfer programs. On the one hand, WIC is thought of as a

transfer program, supplementing the resources of low-income people.[12] When they think of WIC in that way, administrators may be reluctant to cut back the size of any recipient's grant by "tailoring" the food allotment to the individual's requirements. On the other hand, WIC is a medical program, and in such contexts as the age of transition to children's food or calorie intake for overweight infants, administrators expressed desire to "prescribe" the specific type of food each individual needs. Flexibility in quantity and flexibility in type are thus importantly-different dimensions of discretion to administrators.

Milk

Exhibit 3.1 shows that several forms of milk are authorized--fluid, evaporated, and dry milk. Whole dry milk is authorized for use only in Alaska, Puerto Rico and the Virgin Islands.[13] For women and children,

---

[12]Participants also tend to think of WIC, in part at least, as general income supplementation. 92.4 percent of participant households indicated that being on WIC enabled them to spend money formerly spent for WIC-type foods on other things. The other objects of expenditure on which the money was spent were:

Object	Percent of those households who said that WIC allowed them to spend money on other things
Food	74.7%
Clothing	31.3
Housing or Furniture	5.7
Medical or Drugs	4.9
General bills or debt repayment	2.8
Transportation	2.6
Recreation or Reading Matter	1.8
"Baby Needs"	1.5
Other	2.7

(Total does not add to 100 percent because respondent could reply yes to more than one item.)

[13]Whole dry milk is not commonly available in the continental United States.

authorized quantities of milk are 31 quarts of fluid milk, 31 cans of evaporated milk, or 10 pounds of dry milk per month.[14] Cheese may be substituted for some or all of the milk at a rate of one pound per three quarts of milk.

One area of interest in terms of milk policies is the issue of possible lactose intolerance in non-Caucasion adults. Given this concern and the relatively high proportion of non-Caucasions in our sample, it is significant to report that not a single WIC administrator or participant mentioned encountering this problem in adult women. All mentions of milk allergy or intolerance were made with reference to infants and young children, and we discussed them in the section on infant formula.

A second area of interest is seen in the large proportion of clinics offering types of milk that do not need refrigeration. Exhibit 3.2 showed that 55 percent of sample clinics are offering dry milk. One possible reason for this is that some WIC participants lack access to dependable refrigeration. As of 1974, 99.9 percent of the 70.9 million American households had refrigeration.[15] However, the one-tenth of one percent of households that does not constitute 71,000 households. These households tend to be low income and therefore may be the sorts of persons who are participating in WIC. Thus WIC clinics may be offering dry milk to some participants because recipients have no refrigerated storage available.[16] Another possible reason for clinics offering dry milk is that it is less expensive than fluid milk; a third reason is difficulty of refrigerated storage of the clinic itself; and a fourth reason is that in direct distribution systems, it removes the necessity of returning to the clinic several times a month to pick up foods which do not stay fresh for long periods even when refrigerated.

---

[14] In the regulation of January 1976, the fluid milk allotment was changed from 31 quarts per month to 28 quarts.

[15] Statistical Abstract of the U.S., 1975, Table 1235, "Selected Electrical Appliances-Number and Percent of Homes with Appliances, 1960 to 1974," page 723, U.S. Department of Commerce, Bureau of Commerce, Bureau of the Census, 1975.

[16] Other food handling difficulties reported by participants in the survey were lack of uncontaminated water to mix with formula and rat or insect infestation of cereals.

A final controversy concerning milk is whether to increase or decrease the authorized quantity. The basic allotment of milk for a woman or child is approximately a quart a day. Seventeen percent of households have milk left over at the time they receive their next allotment for WIC foods, a comparatively high proportion of households. On the other hand, Exhibit 3.3 showed that 32 mentions per hundred households were made to increase the quantity of milk. This is higher than for any other food. What explains these contradictory indications of popularity?

One part of the answer is that some of the respondents who mentioned wanting to receive more milk are persons currently receiving some infant formula and some milk. Their request for more milk may be simply a request to replace more of their infant formula allotment with milk. Of the approximately 12 percent of households with infants over six months old who mentioned they would like to replace formula with some other food, 87 percent wanted to replace it with milk. An additional 11 percent of respondents mentioned having already asked the clinic staff to make such a substitution. At least some WIC mothers would like to take their infants off formula and give them milk, either in evaporated or fluid form. Another set of participants who would like more milk are those who are receiving cheese as a milk substitute. When they request more milk, then they too are not indicating that they desire more than 31 quarts of milk a month.

Administrators in general expressed agreement with the amount of milk being offered. No WIC administrators suggested increasing the authorized quantity. Four percent of administrators suggested reducing it, and an additional three percent think the authorized quantity should vary with the age of the recipient. When asked whether giving less milk would be an advantage or disadvantage, 61 percent of administrators at all levels felt it would be a disadvantage to reduce the amount.[17,18]

---

[17] Rural clinics were the most in favor of offering less milk. Thirty-three percent of the rural clinics thought this would be an advantage, and 44 percent thought it would be a disadvantage; 19 percent of nonrural clinics thought it would be an advantage, and 66 percent thought it would be a disadvantage. This may reflect more ready availability of milk to farm families from their own cows.

[18] In January 1976, the milk allotment for women and children was reduced from 31 quarts to 28 quarts per month.

Reducing the amount of milk would be:	Percent of Administrators
An advantage	21%
Not important	18%
A disadvantage	61%
Total	100%
(based on 186 administrators)	

SUGGESTED ADDITIONS TO THE FOOD PACKAGE

Even though, as discussed above, participants and administrators have generally favorable reactions to the current WIC food packages, the survey revealed a number of suggested changes. In this section we will discuss foods which participants and administrators would like to have added to or dropped from the WIC food package.

Participants were asked to name one single food which they would like to have added. Exhibit 3.5 lists the major candidate foods mentioned, in order of decreasing number of participant mentions. Seven percent of participants mentioned foods already authorized. Of the remaining 93 percent, meat (including poultry and fish) was the most frequently mentioned food to be added, gathering nearly one-third of all mentions. Infant food in jars was the second most frequently mentioned food to be added, being named by 18 percent of all participants. More significantly, the rate of mention is about 59 percent of those participant households with infants in the WIC program. Fruit, the third most popular nominee for addition to the food package, earned 17 percent of participant mentions.

Participants were also asked which WIC foods they would like to replace with other foods (either from the current WIC foods or outside of the food package). An average of less than five percent of respondents want to replace any WIC foods, and for every food except juice, the majority of respondents wanted it replaced with another food in the current food package.

Exhibit 3.5

Suggested Additions to the Food Package

Suggested Food	Percent of Participants Suggesting Each Food[1]	Percent of Administrators Suggesting Each Food
Meat, poultry, fish	32%	10%
Infant food in jars	20%	13%
Fruit	15%	8%
Bread	8%	1%
Vegetables	4%	8%
Peanut butter	3%	5%
Dried beans, rice, or peas	2%	5%
Butter or margarine	2%	0
Soft drinks, ice cream, sweets	2%	0
Cottage cheese	1%	3%
Flour, grits, etc.	1%	1%
Buttermilk[2]	0	3%
Chocolate Milk[2]	*	1%
Other Foods	3%	0

Based on 3,174 participant households and 186 administrators. Participants were allowed to request only one food, while administrators could name as many as they wished.

[1]Percentages add to 93 percent rather than to 100 percent because seven percent of participants mentioned foods authorized by WIC regulations in force at the time of the survey, April 1975.

[2]Buttermilk and flavored milk became authorized WIC foods in revised regulations of January 1976.

* Less than one percent.

Food to be Replaced	Mentions per 100 households receiving the food	Percent of Mentions to Replace with Food Outside WIC Food Package
Eggs	1	9%
Cheese	2	42%
Juice	2	55%
Milk	2	26%
Formula	6	9%
Cereal	13	22%

As Exhibit 3.5 shows, administrators' suggestions were slightly different from those made by participants. Ten percent of administrators advocated adding meat, a smaller proportion of administrators than the one-third of participants who wanted it. Only one percent of administrators wanted bread added to the food packages. A greater proportion of administrators than participants suggested vegetables, peanut butter, dried beans or peas, cottage cheese, and buttermilk. The food upon which significant proportions of both participants and administrators agreed was infant food in jars. Thirteen percent of administrators mentioned this food, a higher proportion than for any other food.

Another type of change on which administrators' reactions were obtained was the option to design their own food package. One-third of state directors surveyed felt that state administrators should be allowed to develop a food package to be consistent with their own specific population needs and characteristics, given a general set of nutrition guidelines or goals and cost criteria.

To summarize we can say that expanding the offerings of WIC foods did not appear to be a high urgency change to either participants or administrators. If such changes were to be contemplated, baby food in jars was endorsed by both for addition to the infants' foods, and meat and fruit commanded fairly widespread consensus for additions to the child and adult authorizations. Other items were mentioned less frequently, with little consensus between participants and administrators.

ETHNIC FOOD PREFERENCES

The Child Nutrition Act of 1975, passed after our survey in April 1975, stated that the WIC food package must be flexible with respect to cultural food preferences among the different ethnic groups WIC serves:

> The contents of the food package shall be made available in such a manner as to provide flexibility, taking into account medical and nutritional objectives and cultural eating patterns.[19]

For the foods offered by WIC at the time of the survey, very few ethnic differences in preference are evident. The WIC foods are separate from traditional ethnic dishes and seem to be, in large part, eaten by all households in our sample regardless of ethnic background. However, some ethnic differences do arise in suggestions made by WIC participants for foods to be added to the food package.

In this section, we will look at what might be involved in being flexible to ethnic preferences in WIC foods.

Satisfaction and Food Preferences

Some differences were found across ethnic groups in their general level of satisfaction with WIC foods, as the following table indicates:

	Percent of Respondents Within Each Ethnic Group			
The WIC foods are:	White	Black	Spanish American	American Indian
Just exactly what you'd like to get	20%	22%	29%	40%
Pretty much what you'd like to get	76%	71%	67%	56%
Not really what you'd like to get or not at all what you'd like to get	4%	7%	4%	4%
Total	100%	100%	100%	100%

(based on 3,485 participant households)

American Indians reported the highest level of satisfaction, with 40 percent of this group saying that WIC foods are "just exactly" the foods they would like to receive. Black respondents reported being slightly less satisfied

---

[19] Public Law 94-105, 42 USC 1786 Section 14.

with WIC foods; 93 percent of blacks said the foods are pretty much or just exactly what they would like to receive, while 96 percent of all other groups reported this level of satisfaction. White respondents and Spanish Americans reported the second and third highest level of satisfaction respectively. Technical Note 2 to this chapter shows that this difference among ethnic groups is large enough not to be due to random variation alone. However, these differences are small, with the proportion of discontented persons ranging only from four percent to seven percent.

White participants were far more likely than other groups to have requested changes at the clinic in WIC foods. This is shown in the following table.

Ethnic Group	Proportion of each group having requested changes at their clinic	Average number of requests for changes per hundred households
White	29%	36
Black	17%	22
American Indian	16%	22
Spanish American	16%	19

(based on 3,485 participant households)

This is paradoxical, since we have just seen that whites are relatively satisfied with the WIC foods compared to other groups. On average, 62 percent of food changes requested at clinics by participants from all ethnic groups were granted. The likelihood of clinic staff making the requested change did not vary much for different ethnic groups.[20] Hence the relatively smaller number of requests by minority groups for changes appears to have no obvious direct foundation in the proportion of requests granted by WIC staff. This may indicate that white participants feel more comfortable with the WIC system and clinic staff menbers, but this is only conjecture.

---

[20]The percentage of requests for changes that were granted for different ethnic groups are: whites - 64%; blacks - 63%; Spanish Americans - 60%; American Indians - 65%.

Exhibit 3.6 illustrates three indices of the relative popularity of WIC foods by ethnic groups. For the current set of foods, there appear to be very few differences in preferences across ethnic groups. For most foods, no clear consensus of opinion within a specific group exists across all three indices. For instance, American Indians gave both a high proportion of mentions to increase the amount of cheese and a high proportion of mentions to drop it or decrease the amount, and many of this group reported having cheese left over at the time they are to receive their next allotment of WIC foods.

It seems that for the current selection of WIC foods, ethnic preferences are not, on average, very different. The main reason for this lack of difference may be that the foods involved are items such as milk, eggs, or cheese which are staple commodities each ethnic group can prepare in its own way. Other items, such as cereal or formula are eaten separately from traditional ethnic dishes.

Differences by Income Level

We also looked at food preferences at different levels of household income, finding no major differences in satisfaction and only minor variations in preferences. Ninety-five percent of families both above and below the poverty threshold said that WIC foods are "pretty much" or "just exactly" what they would like to receive. Respondents from households with incomes below the poverty threshold were more likely to express a preference for increasing the amount of foods than were respondents from households with incomes above the poverty threshold. This was especially true for cereal and milk. The overall rate of requests to increase food was .48 per household below the poverty threshold and .40 for families above the poverty threshold; the rate of requests to decrease food was .08 per household below the threshold and .06 for households above the threshold.

Allergies

The following table indicates, for each ethnic group, the proportion of requests for food changes which were motivated by allergic reactions.[21]

---

[21] American Indians are excluded from these tabulations because too few mentions of allergy problems were made by this group to allow meaningful comparisons across food types.

Exhibit 3.6

Three Indicators of the Relative Popularity of WIC Foods by Ethnic Group in April 1975

Ethnic Group	Mentions to increase the food per 100 households using the food	Mentions to decrease or drop the food per 100 households using the food	Proportion of households by ethnic group who have food left over at time of next allotment
		EGGS	
White	17	4	7%
Black	23	2	9
American Indian	35	2	3
Spanish American	25	3	3
		CHEESE	
White	12	5	9%
Black	8	5	9
American Indian	23	12	17
Spanish American	8	4	4
		CEREAL	
White	9	23	14%
Black	12	23	13
American Indian	10	15	17
Spanish American	11	20	9
		JUICE	
White	10	8	17%
Black	22	5	9
American Indian	14	1	14
Spanish American	22	6	6
		FORMULA	
White	8	18	21%
Black	15	7	24
American Indian	7	0	9
Spanish American	13	14	17
		MILK	
White	25	8	13%
Black	29	10	22
American Indian	19	12	16
Spanish American	43	5	15

Based on 3,485 participant households

Ethnic Group	Eggs	Cheese	Cereal	Juice	Infant Formula	Milk
White	0%	3%	3%	16%	44%	22%
Black	0	10	4	23	42	20
Spanish American	0	0	4	17	44	33

(based on 840 requests reported by participant households)

As with food preferences, no clear pattern of reported allergy problems exists across ethnic groups.

Administrators' Opinions

Sixty-one percent of administrators think it would be an advantage to accommodate ethnic or individual tastes, while 33 percent said it was not important to do so:

Accommodating ethnic or individual food preferences would be:	Percent of Administrators
An advantage	61%
Not important	33
A disadvantage	6
Total	100%

(based on 186 administrators)

A substantial proportion of WIC administrators who think it is not important to accommodate food preference of participants may already understand that ethnic preferences do not seem to be an issue for participants with the current food package. And since the question asked simultaneously about individual preferences as well as ethnic preferences, this answer may be partially echoing such issues as medical discretion to adjust such matters as the age of transition to adult foods.

Suggested Additions to the Food Package by Ethnic Group

Ethnic preferences are evident in foods that participants would like to add to the food packages. Exhibit 3.7 shows the frequency with which each

Exhibit 3.7

Suggested Additions to the Food Package
by Ethnic Group

Suggested Food	Percent of All Participants Suggesting Each Food	Percent of Participants in Each Ethnic Group Suggesting Each Food			
		White	Black	Spanish American	American Indians
Meat, poultry, fish	32%	24%	37%	33%	36%
Infant food in jars	20	22	18	24	12
Fruit	15	17	12	13	26
Bread	8	13	6	4	7
Vegetables	4	4	5	3	4
Peanut Butter	3	3	3	1	4
Dried beans, rice or peas	2	*	2	3	2
Butter or margarine	2	3	2	1	1
Soft drinks, ice cream, sweets	2	1	2	2	1
Cottage cheese	1	2	0	*	0
Flour, grits, etc.	1	1	1	2	2

Based on 3,174 participant households.

*Less than .5 percent.

ethnic group mentioned different foods as suggested additions to the current WIC foods.

Several foods appear for which minority group and white participants differ. However, the difference among groups is typically only a percentage point or two, and may be as much a reflection of regional preferences as of ethnic preferences. Minority groups mentioned meat, dried beans and peas, rice, flour, and grits more often than did white participants. White participants mentioned dairy products (i.e., butter or margarine, and cottage cheese) and bread more often than did the minority group participants.

American Indians mentioned wanting to add infant food in jars to the WIC food package less frequently than any other group. This is understandable in light of their satisfaction with infant formula. Fewer Indian households than other ethnic groups wanted to decrease the amount of formula and fewer had formula left over the next time they were to receive WIC foods.

Adding fruit to the WIC food package was mentioned most frequently by American Indian and white participants. Some of the participants from these two groups would apparently like to replace the WIC juices with fruit; greater proportions of American Indian and white participants reported having juice left over the next time they were to receive their WIC foods than did Spanish or black participants.

FOOD SHARING IN THE HOUSEHOLD

We saw in the participant profile material in Chapter 2 that WIC recipients tend to be members of large families. WIC households include, on average, 2.8 people who are not in the WIC program along with 1.5 persons who are in the program. Each WIC child or woman, on average, shares his household with 0.9 non-WIC children between the ages of one and ten, 0.5 non-WIC teenagers between the ages of eleven and eighteen, and 1.4 non-WIC adults over age eighteen.

To what extent are WIC foods, intended by regulations for only WIC recipients, consumed by these other members of the household? The answer, though difficult to pinpoint exactly, is that sharing WIC foods among other family members frequently occurs.

One common way WIC food becomes shared in the family is that it is used in preparing family meals. The following table shows that 81 percent of

respondents from participant households use some WIC foods in preparing meals for the whole family.[22]

Use WIC food in preparing family meals	Percent of Participant Households
Yes	81%
No	19
Total	100%

(based on 3,525 participant households)

Among the 19 percent of respondents who do not use WIC foods for family meals, about two-thirds are receiving infant formula, a food not easily used this way. Of the remaining respondents who gave reasons for not using WIC foods in preparing meals, only one percent said it was because the food is saved for the designated recipient.

Why WIC foods were not used in preparing family meals	Percent of Respondents
Difficult to use - infant formula	69%
Difficult to use - other	17
Individual tastes	11
Food intolerance or ethnic or personal dislike	2
Reserve for designated recipient	1
Total	100%

(based on 613 participant households who do not use WIC foods in preparing meals)

Suppose that all WIC foods are being shared among all members of the household.[23] Since there are an average of 2.8 non-WIC non-infant household members for each non-infant WIC recipient, the average WIC recipient would actually be

---

[22] Across ethnic groups, the percent of participants who use WIC foods in preparing family meals varies: whites - 84%; blacks - 78%; Spanish Americans - 85%; and American Indians - 92%.

[23] We excluded the foods given to WIC infants from this analysis, because infant formula is not so amenable to food sharing as are the WIC foods given to women and children. We excluded all infants--whether on WIC or not--from being considered as sharing the WIC foods given to their older siblings or mother because they eat relatively little of regular family foods.

consuming only about 25 percent of his or her food allotment. Alternatively, suppose each non-infant recipient is sharing all of his or her WIC foods only with all children in the household 18 years and under. This is perhaps plausible in such cases as fluid milk. Since there are, on average, 1.4 children under age 18 in the household for each non-infant WIC recipient, the average WIC recipient would then actually be consuming about 40 percent of the food allotment. If all of the WIC foods are being shared with only the 0.9 non-WIC children between one and ten years old, the average non-infant WIC recipient would be consuming about 50 percent of his or her food allotment. These calculations are hypothetical, of course, and they are upper bounds, in that they assume that all of the food is shared equally. Data are not available on the proportions of food shared among the 81 percent of households that do use the foods to prepare family meals.

Food sharing may also help to explain the relative popularity of specific foods. Eggs and cheese, which are foods easily used in dishes for the whole family, are very popular foods among WIC participants. Infant formula, a food which is more difficult to serve to family members, is relatively unpopular compared to other WIC foods.[24]

However, even foods which seem to be unlikely candidates for sharing among other members of the family are not immune. In the course of the survey, we picked up brochures being distributed to recipients by WIC clinics encouraging (and often giving recipes for) the following uses of WIC foods in feeding the entire family:

- using infant formula in fudges, shakes, and gravies;
- mixing infant cereals into cornbread, tamale pie, casseroles, tortillas, meatloaf, and gravies;
- using juices in salad dressings, coffee cakes, nutbreads, and vegetable glazes; and
- using milk in ice cream, sweet potatoes, soups, and meatloafs.

This illustrates not only that virtually any sort of food can be shared with non-WIC persons, but also that WIC administrators may not universally actively oppose such uses of WIC foods.

---

[24] Among households receiving WIC foods only for infants, 7.5 percent reported being dissatisfied with the foods. Among households receiving both infant foods and child/adult foods, the dissatisfied proportion fell to 5.7 percent and among households receiving only child/adult foods, it was 4.4 percent.

What can we conclude about food sharing? It appears that WIC foods are commonly shared with other family members, and that at least in a few selected instances, sharing is not discouraged by WIC administrators.

CONCLUSIONS

How strict should WIC food package regulations be? How tightly should participants be constrained, and how narrowly should administrators be restricted? These questions are relevant to the multiple, specific decisions which are made in specifying the WIC food package and the operating rules.

To a high degree, it seems that these decisions have been made in a fashion which pleases a wide range of those affected. WIC participants in general seem to find the foods useful and palatable. An average of 96 percent of recipients declared themselves satisfied with the foods. WIC administrators find that they too are satisfied with the rules. And this is despite the fact that the WIC food package provides relatively large quantities and relatively few foods.

There are, however, a few issues where participants' and administrators' actions, as well as their words, indicated a preference of current practices:

1. Both administrators and participants strongly advocated allowing a wider range of cereals for children and adults, especially allowing some hot cereals.

2. Administrators desire greater authority at the clinic level to adjust food allotments to match the medical or allergy difficulties of individuals. They would like, for example, more flexibility to leave infants on formula beyond one year of age and to prescribe low-calorie formula.

3. Administrators and participants both encountered problems in matching unit sizes and would find it easier to work with regulations specifying average total quantities per time period rather than numbers of units of specific sizes.

4. Administrators and participants both indicated the popularity of cheese as a milk substitute, suggesting that it might be made more universally available.

Other findings of our analysis suggest that:

1. There is little difference between ethnic groups in preferences among current WIC foods;

2. while having the mandate to do so, there is little tailoring by administrators of the amount of food to the nutritional needs of individuals;

3. when participants and administrators were asked about expanding the range of foods offered under WIC, infant food, meat, and fruit were candidate food items which commanded some consensus; and

4. a large proportion of households use at least some of the WIC foods in preparing family meals, suggesting that (a) the eligible recipient is probably receiving less nutritional supplementation than is envisioned by the program, and (b) the program may be, to some degree, improving the nutritional intake of other members of the recipient's household.

TECHNICAL NOTES

1. Asking participants directly about their satisfaction with the WIC program raises the question of whether responses are biased in a favorable direction. When predominantly low income, poorly educated respondents are faced with an interviewer representing the government, respondents may perceive the interviewer as personally intimidating. The interviewer could well be seen as an authority figure with power to cut WIC benefits if given the "wrong" answer. Respondents may hesitate to express negative opinions about the WIC program, or may give opinions that are more positive than their true feelings.

   Research in survey methodology has shown that respondents often give responses which are more "socially desirable" than their true beliefs, and this tendency may be increased among persons with little formal education.[1] Respondents may also intentionally distort their answers when material or psychic benefits may be derived from such distortion.[2] Other research has shown that in multiple-choice questions, respondents are more likely to choose strong and concise responses than moderate or indecisive ones.[3]

   We may see an example of one or more of these types of response bias in the fact that 23 percent of the respondents in this study said the WIC foods were "just exactly" what they would like to receive. Respondents with only grade school education were much more likely to respond this positively than were other groups. Thirty-eight percent of respondents with only some grade school education gave this response, while an average 22 percent of the groups with more than grade school education did so. For these reasons we suspect some bias in a favorable direction in participant responses.

   However, we also feel that the extent of this bias is sufficiently small that it is not fatal to the real meaning of the data. The bias was minimized to some extent by, in most cases, matching the ethnic group of respondents and interviewer. Secondly, responses to other less direct

---

[1] See "Social Desirability Response Set: A Possible Source of Bias in the Survey of Working Conditions?" by J. Thad Barnowe and Robert P. Quinn, in "1969-1970 Survey of Working Conditions: Chronicles of an Unfinished Enterprise," Robert P. Quinn et al., Institute for Social Research, The University of Michigan, Final Report to Employment Standards Commission, United States Department of Labor, 1971.

[2] See "The Problem of Response Error in Interviews," by Louis Hawkins and Jo Ann Coble in Working Papers on Survey Research in Poverty Areas by John B. Lansing, Stephen B. Withey, and Arthur C. Wolfe. Ann Arbor: The Institute for Social Research, University of Michigan, 1971.

[3] Unobtrusive Measures: NonReactive Research in the Social Sciences, Eugene J. Webb, Donald T. Campbell, Richard D. Schwartz, and Lee Sechrest. Rand McNally and Company, 1966.

probes are consistent with the responses received from the direct question about satisfaction with WIC foods. Respondents indicated that they are using them to prepare family meals; the proportions of people who have asked for changes in the WIC foods is small; and the proportion having foods left over at the time to receive their next allotment of food is small.

Thus we recognize the possible problem with response bias in a favorable direction and believe it exists to some extent. However, we also believe that this does not obscure the overall direction of the responses.

2. We computed a chi-square statistic for the distribution of these four ethnic groups across these three levels of satisfaction with WIC foods. The chi-square statistic was 68.3 with 11 degrees of freedom. The probability of obtaining this value given that the responses by different ethnic groups came from a common underlying distribution is less than .001.

CHAPTER 4

WIC ADDITIONAL BENEFITS

The main activity of the WIC program, of course, is food distribution. But the broad intent of the food distribution is to raise nutritional levels and, ultimately, to improve the health of WIC recipients. As the Child Nutrition Act of 1975 states:[1]

> It is, therefore, the purpose of the program authorized by this section to provide supplemental nutritious foods as an adjunct to good health care . . . in order to prevent the occurrence of health problems.

In addition to food distribution, two other types of WIC outputs contribute to achievement of these health objectives. The first is delivery of nutrition education to WIC recipients, so that they utilize WIC foods and other foods for maximum nutritional benefit. The second is encouragement and facilitation for WIC recipients and their families to consume more health care services from the health clinics hosting WIC. In this chapter we discuss the extent to which these outcomes are sought and obtained by WIC programs.

NUTRITION EDUCATION

The first WIC regulations to require that WIC programs provide nutrition education were those of January 1976. Yet from a much earlier date, WIC administrators at the state and local levels placed substantial emphasis on this service in the implementation of WIC; we shall see in Chapter 5 that as of April 1975, the average WIC clinic in our sample was already spending 11 percent of its administrative outlays on nutrition education. (This is 11 percent of all administrative expenditures, whether funded by federal

---

[1] Public Law 94-105, USC 1786 Section 14.

reimbursement or not; nutrition education was not an allowable administrative expense for federal WIC funds until January 1976.)

Individual Nutrition Counseling

The following proportions of clinics reported offering individual (face-to-face, one-to-one) counseling in nutrition to their WIC recipients at the time of the survey in April 1975:

Percent of WIC Recipients Receiving Individual Nutrition Counseling	Percent of Clinics
75% - 100%	69%
50% - 74%	17
25% - 49%	5
1% - 24%	6
None	3
Total	100%

(based on 96 clinics)

Only 3 percent of clinics did not counsel any recipients, and nearly 70 percent of clinics offer nutrition counseling almost universally to their WIC recipients.

Some of these clinics had been offering nutritional counseling services to participants in their health clinics before WIC started. Nevertheless, for over 60 percent of the clinics, the initiation of WIC was associated with an increase in the amount of counseling offered. This is shown in responses to the question, "How does this current amount of counseling compare to what you offered before WIC started?":

Response	Percent of Clinics
A lot more	38%
A little more	25
About the same	36
A little less	0
A lot less	1
Total	100%

(based on 89 clinics)

Counseling was offered in varying time patterns by different clinics. The following table shows that the most common pattern for counseling (practiced by 47 percent of clinics) was to provide counseling both when recipients

were first enrolled in WIC and during each WIC visit. However, 31 percent of clinics offered nutritional counseling when the recipient was first enrolled and then only at times when special problems occurred for the recipient; and 22 percent of clinics provided this service only at the time of initial enrollment.

When Nutrition Counseling is Done	Percent of Clinics
When first enrolled and each visit	47%
When first enrolled and for special problems	31
When first enrolled	22
Total	100%

(based on 85 clinics)

Clinics doing individual nutrition counseling reported that the average first-visit counseling session lasted 20 minutes, and the average "each visit" counseling session lasted 12 minutes.[2]

Nutrition Education Classes

A second broad method of nutrition education is classes or group sessions. Forty-two percent of the clinics conducted some nutrition education to groups of WIC recipients in addition to individual counseling; no clinic reported providing only group sessions with no individual counseling. Of this 42 percent, 73 percent conducted discussions, lectures and demonstrations, and 53 percent utilized audiovisual methods such as films.[3] Within the set of clinics utilizing group methods of instruction, the clinics reported the following proportions of their WIC recipients receiving the programs:

---

[2]The standard deviation for number of minutes for nutrition counseling when first enrolled is 14, the minimum is 5 minutes, and the maximum is 60 minutes. The standard deviation for number of minutes during each clinic visit is 8, the minimum is 4 minutes, and the maximum is 40 minutes.

[3]The mean number of minutes of counseling when a recipient is first enrolled in WIC in clinics that provide only counseling was 18, while for clinics that provide both counseling and group session it was 23. For counseling provided at each clinic visit the mean number of minutes is 13 for clinics giving only counseling and 11 minutes for clinics that provide counseling and group sessions. These data seem to indicate that group sessions tend mainly to supplement rather than to substitute for face-to-face counseling.

Percent of Recipients at these Clinics Receiving Group Nutrition Education	Percent of Clinics
75% - 100%	44%
50% - 74%	10
25% - 49%	18
<25%	28
Total	100%

(based on 40 clinics)

A little over half of WIC clinics reported that the WIC program increased the amount of nutrition education classes offered; compared to the number of classes provided for medical clinic participants who are not WIC recipients, the amount of sessions was:

Response	Percent of Clinics
A lot more	32%
A little more	21
About the same	47
Less	0
Total	100%

(based on 40 clinics offering nutrition education classes)

This WIC-induced increase in nutrition classes is slightly smaller than the comparable increase in individual nutrition counseling. While 63 percent of clinics offering counseling reported increasing that service, 53 percent of clinics offering nutrition group sessions reported an increase in that activity.[4]

A wide variety of topics are covered in these group sessions. The following proportions of clinics offering group sessions indicated that these topics were included in their work:

Topic	Proportion of Clinics Whose Group Sessions Cover this Topic
Nutritive value of food, proper selection of foods	98%
Food preparation and storage	70%
Stretching the food dollar	63%
Other topics	31%

(based on 40 clinics)

---

[4] However, the survey question on counseling was a comparison of "before WIC" to "with WIC." Any normal upward trend in counseling of all clinic recipients would be reflected in the 63 percent figure and would therefore tend to overstate the impact of WIC on counseling.

Nutrition Education for Non-WIC Clinic Participants

In a little over half of clinics surveyed, the presence of a WIC program also was associated with increases in the amount of nutrition education, both counseling and classes, received by non-WIC persons attending the host medical clinic. Clinic administrators reported that the amount of nutrition education received by non-WIC patients, compared to the time before WIC started was:

Response	Percent of Clinics
A lot more	32%
A little more	23
About the same	44
Less	1
Total	100%

(based on 91 clinics)

Nutrition Education of Staff

Different clinics use many different types of staff members to provide nutrition education to recipients. The following table shows that, on average, 71 percent of personnel expenditures for participant nutrition education at survey clinics were for the work of staff members with formal credentials in nutrition or medicine, while 29 percent of these costs were for staff members whom we assume have comparatively little formal training in nutrition. In some clinics, selected WIC recipients themselves assist in conducting nutrition education.

Job Category	Percent of Personnel Expenditures for Nutrition Education
Nutritionist, Dietitian, Nutrition Aide	58%
Physician or Nurse	13
Administrative/Fiscal Staff, including Clinic Director	11
WIC Clerk and Voluntary Staff	11
Social Worker and Social Work Aide	7
Total	100%

(based on 84 clinics)

Staff members not professionally trained in nutrition or medicine may still have some in-service training or experience in nutrition. Fifty-three percent of survey clinics reported that persons directly issuing food or vouchers to participants had education, training, or prior experience in

nutrition. The survey also showed that considerable resources are expended by both WIC clinics and program area offices to increase the nutritional awareness of their own staffs. Eighty-seven percent of administrators at clinics and program area offices reported that they conduct nutrition education sessions for clinic or program area staff. The WIC program seemed to have increased the amount of staff training in nutrition; administrators reported that, compared to before WIC, the amount of staff nutrition training they did was:

Response	Percent of Clinics
A lot more	34%
A little more	29
About the same	28
A little less	6
A lot less	3
Total	100%

(based on 83 clinics and program area offices)

As was true for recipient nutrition classes, training of staff members covers a wide variety of topics. The topics covered in these sessions included the following:

Topic	Percent of Clinics and/or Program Area Offices Holding Staff Training on Nutrition Education Who Said this Topic was Included
Nutritive value of food, proper selection of food	89%
Nutrition education techniques	82%
Food preparation and storage	49%
Stretching the food dollar	47%
Other topics	49%

(based on 83 clinics and/or program area offices)

What Types of Clinics Do Nutrition Education?

Exhibit 4.1 compares the nutrition education activities of clinics of different sponsorship, food distribution system, income level of recipient, size, and location. The first three rows of the table display three measures of the quantity of nutrition education provided by clinics: the proportion of clinics providing nutrition counseling to at least 75 percent of WIC recipients, the mean number of minutes of counseling provided upon initial enrollment of a WIC recipient, and the mean number of minutes of counseling

EXHIBIT 4.1

Measures of Nutrition Education

	Sponsor			Distribution System		
	City/County Health Department	Private Non-profit Clinic	Hospital	Direct Distribution	Retail Purchase	Home Delivery
Percent of clinics providing nutrition counseling to at least 75% of WIC recipients	75%	57%	57%	90%	68%	58%
Mean number of minutes of counseling when recipient is first enrolled	18	18	9	16	18	18
Mean number of minutes counseling each subsequent WIC visit	5	6	7	7	5	6
Percent of clinics providing all nutrition education on a one-to-one basis	58%	55%	57%	80%	52%	65%
Percent of personnel costs for nutrition education going to nutrition professionals and aides	74%	54%	78%	45%	75%	75%
Mean percent of recipients indicating that they learned from nutrition education	11%	11%	10%	22%	10%	12%

Exhibit 4.1 (cont'd.)

	Mean Welfare Ratio for Recipients in each Clinic				Clinic Authorized WIC Caseload			Clinic Location	
	0.0-0.5	.5-1.0	1.0-1.5	1.5-2.0	1-199	200-1000	More than 1000	Rural or Small City	Medium or Large City
Percent of clinics providing nutrition counseling to at least 75 percent of WIC recipients	71%	65%	69%	100%	67%	71%	62%	81%	61%
Mean number of minutes counseling when recipient is first enrolled	12	19	18	41	23	19	19	22	18
Mean number of minutes counseling each subsequent WIC visit	8	13	11	15	13	10	14	12	13
Percent of clinics providing all nutrition education on a one-to-one basis	57%	66%	44%	83%	67%	57%	50%	62%	55%
Percent of personnel costs for nutrition education going to nutrition professionals and aides	57%	64%	75%	60%	95%	67%	65%	52%	72%
Mean percent of recipients indicating that they learned from nutrition education	20%	18%	8%	5%	9%	8%	17%	14%	9%

provided in each subsequent WIC visit to the clinic. For most clinic types, no consistent pattern exists across all three measures of quantity. For instance, comparing clinics sponsored by different types of host health clinics, those sponsored by city or county health departments provided counseling for a higher proportion of WIC recipients than do clinics sponsored by private, nonprofit health clinics or hospital clinics. However, the average number of minutes of nutrition counseling provided to each WIC recipient by health department clinics was no greater than that provided by other sponsors.

One important exception to this apparent lack of pattern illustrated in Exhibit 4.1 should be noted. Those clinics which have the highest mean participant welfare ratio (1.5-2.0) are providing significantly more nutrition education to recipients than clinics in any of the lower welfare ratio groups;[5] each of the three measures of quantity of nutrition education illustrate this pattern.

The fourth and fifth rows of Exhibit 4.1 describe two dimensions of the manner in which these clinics present nutrition education: the extent to which counseling is done on a one-to-one basis rather than in group sessions and the extent to which nutrition professionals are involved. The proportion of clinics providing all nutrition education on an individual counseling basis (rather than in group sessions) was 56 percent; this figure varied among different groups of clinics shown in the Exhibit from 44 percent to 83 percent. The percent of total personnel costs for nutrition education going to nutrition professionals and aides averaged 58 percent, and varied among different groups of clinics from 45 percent to 95 percent.

Finally, row six of Exhibit 4.1 presents one measure of the effectiveness of nutrition education: the proportion of recipients surveyed at each clinic who indicated that they learned from the nutrition education provided at the clinic. Comparing this measure across different clinic characteristics shows different levels of learning by WIC recipients; some types of clinics achieved more than 20 percent of recipients indicating that they learned, while others achieved fewer than 5 percent. In the next sections, we will discuss what can

---

[5] Differences between the highest welfare ratio group and each of the other groups were significant at the .05 level or higher.

be inferred about the relationships between this measure of effectiveness and the quantity and type of nutrition education being provided.

What Contributes to Effective Nutrition Education?

We must first describe how this index of the effectiveness of nutrition education was derived. In the survey, WIC participant households were asked whether they remembered anyone at the clinic talking to them about the importance of eating the right foods for good health; 75 percent replied that they did. Those who replied affirmatively were then asked what effect this discussion had on their thinking about the foods they eat. The following table shows that 12 percent of respondents indicated that they had learned from nutrition education.[6]

Response	Percent of Respondents
Respondent indicated that she did not learn from nutrition education	88%
Respondent indicated that she did learn from nutrition education	12%
Total	100%

(based on 2,687 participant households in which respondent remembered receiving nutrition education)

However, as the next table suggests, wide variation was observed among clinics providing nutrition education in the proportion of recipients who indicated that they learned.

Percent of Recipients Who Indicated They Learned from Nutrition Education	Percent of Clinics
None	27%
1-10 percent	27
10-20 percent	21
20-50 percent	22
50-70 percent	3
Total	100%

(based on 93 clinics providing nutrition education)

[6]The response was scored as indicating that the recipient had learned something from the nutrition education lessons if either the recipient said that she had learned or if she repeated some specific effect of the lessons (e.g., "I stopped giving the kids so much candy and beer"). The response was scored as indicating that she did not learn if she said either that it had no effect or if she said that she already knew the material taught.

For some clinics, not a single recipient reported learning from nutrition education; for other clinics, over 50 percent of recipients indicated that they learned something. What makes nutrition education effective in some clinics and ineffective in others?

Recipient Characteristics

The first area to be examined in answering this question is whether WIC recipients who indicated learning from nutrition education are different from recipients who reported they did not learn. Exhibit 4.2 displays for these two groups of recipients selected personal characteristics, such as their educational background, ethnic group, and income. For most of these characteristics, no significant differences appear between those who learned and those who did not learn. Ethnic group and recipient income were two exceptions.[7] Seventeen percent of white recipients indicated they learned from nutrition education, while no more than 10 percent of any minority group reported learning. Both mean income and mean welfare ratios for recipient households who reported learning were about 8 percent higher than the comparable figures for recipient households who indicated they did not learn.

Differences in Quantity and Style of Nutrition Education

Nutrition education effectiveness may also be related to characteristics of the clinics' programs, such as the quantity and manner of nutrition education. These can be examined using Exhibit 4.1. In that exhibit, we see that a high quantity of nutrition education is not necessarily accompanied by a high score on the measure of effectiveness. Comparing clinics of different mean participant welfare ratios provides a clear example of this pattern. We saw earlier that all three measures of the quantity of nutrition education increase as the mean welfare ratio of clinic participants increases; however, the

---

[7] The percent of whites who indicated learning was significantly different from the percent of blacks and percent of Spanish-speaking at the .10 level of significance. The average income of learners was significantly different from that of nonlearners at the .10 level of significance. All other differences were not significant at the .10 level.

EXHIBIT 4.2

Selected Characteristics of WIC Recipients Who Reported Learning and Not Learning from Nutrition Education

Recipient Characteristics	Participants Indicated That They Did Not Learn from Nutrition Education	Participants Indicated That They Learned from Nutrition Education
Percent of recipients in each ethnic group:		
White	83%	17%
Black	90%	10%
Spanish American	93%	7%
American Indian	91%	9%
Mean welfare ratio	.96	1.03
Mean income	$5,033	$5,441
Mean education of head of household	10.4	10.4
Mean education of person in household who usually buys and prepares food	10.5	10.4

Based on 2,175-2,679 participant households depending on category.

effectiveness of nutrition education, insofar as we are able to measure it, decreases.

Exhibit 4.1 also shows conflicting results in effectiveness of nutrition education by whether clinics are providing all education on a one-to-one basis. A comparatively high proportion of recipients in direct distribution clinics (22 percent) reported learning from nutrition education, and a high proportion of direct distribution clinics (80 percent) reported doing only nutrition counseling with no group sessions. However, comparing clinics of different sizes, a high proportion of recipients (17 percent) in large clinics (more than 1,000 recipients) indicated learning, while a comparatively low proportion (50 percent) of these clinics do all nutrition education on a one-to-one basis. These data do not point to exclusive reliance on face-to-face, individual nutrition counseling as a sure path to the most effective nutrition education.

One somewhat more clear result in Exhibit 4.1 is that those clinics with comparatively low involvement of nutrition professionals in nutrition education are the same clinics in which the highest proportions of recipients reported that they learned from the nutrition education provided. For instance, in direct distribution clinics, the mean percent of recipients who reported they learned was 22 percent, and only 45 percent of total personnel costs for nutrition education was going to nutrition professionals in these clinics. Retail purchase clinics and home delivery clinics each expend more than 75 percent of their personnel costs for nutrition education on nutrition professionals, and they achieve only 10 to 12 percent of participants indicating that they learn from the lessons produced. The same pattern can be seen in Exhibit 4.1's comparison of clinics of different sizes, location, and recipient welfare ratios.

The Experiences of Successful Nutrition Educators

These results offer little strong guidance on how to increase the effectiveness of a nutrition education program. This may be because of the nature of this analysis, or it may be because the difference between success and failure is not to be found in gross differences such as whether or not the counseling is done in groups, but instead is found in more subtle matters of tone and interpersonal rapport. To examine this question, we reinterviewed

by telephone a small group of nutrition educators from clinics in our sample. These telephone calls included interviews with individuals responsible for nutrition education at the four clinics in our survey which displayed the highest proportion of participants indicating that they had learned from their nutritional education; between 45 percent and 70 percent of participants at these clinics indicated that they had learned. In addition to calls to those "successful" clinics, calls were also made to nutrition educators at several other clinics, chosen on three criteria: (a) the clinics were similar to the four "successful" clinics on such dimensions as locale, sponsorship, and the ethnic and income characteristics of participants; (b) the clinics reported doing substantial quantities of nutrition education; and (c) not a single participant in our sample at these clinics indicated that she had learned anything from those lessons. In these unstructured telephone interviews, administrators described their nutrition education programs and how they believe nutrition education should be conducted. The material in the next few paragraphs is a summary of principles which seemed consistently associated with success, as indicated in these interviews and in other material gathered in the main survey.

The first important principle seemed to be that nutrition education should be integrated thoroughly into the WIC program. It should take place on each clinic visit, as part of routine WIC procedures; a single long session at the time of first enrollment, or counseling sessions which were optional, seemed to have little impact. The lessons should deal specifically with WIC foods. Furthermore, the nutrition sessions should interact with food allocation decision-making; individuals' food allotments should be adjusted to accommodate problems uncovered in nutrition education sessions (e.g., if a mother says her child will not eat a certain brand of WIC cereal, offer another brand).

Next, it seemed important to understand the specific details of each recipient household's situation and problems. Successful clinics seemed to discuss with each mother individually what every member of the household eats, how much money the family has to spend for food, and the family's circumstances (including special health problems, the availability of cooking facilities, situations such as irregular eating hours, etc.). Some clinics utilized simple questionnaires, while others used informal conversation.

In addition to understanding the eating situation each individual household faces, successful clinics also make efforts to understand the general lifestyles of their recipient populations and to relate the counseling to their needs. Some clinics established advisory councils of WIC recipients who offered suggestions on useful topics and who reviewed lessons prior to presentation; other clinics used selected WIC recipients as nutrition trainers. Successful nutrition educators stressed the importance of translation of all brochures, posters, and recipes, and the use of nutrition trainers who speak foreign languages where recipients are not fluent in English.

One obvious application of this concept of tailoring to ethnic and individual circumstances is that of suggested recipes. One successful trainer went to great length to find non-pork recipes for Black Muslim recipients and non-meat recipes for vegetarian recipients. All successful trainers emphasized the necessity of focusing on dishes which families are already familiar with, spices that recipients are likely to have already on hand, and cooking procedures that recipients recognize. Lessons must also deal with eating situations participants commonly encounter; for example, recipes for dishes for afternoon teas or camping trips are probably not relevant, although at least one WIC program has compiled them. All ingredients called for should be those which participants can afford; for example, one successful trainer revised a standard recipe for salmon patties to substitute mackeral for salmon. Finally, examples cited should derive from participants' daily experiences; for example, a poster illustrating meat as one of the "four basic food groups" should not use a picture of an expensive cut of meat.

The next important principle is to suggest marginal changes to recipients rather than radical ones. Successful trainers tend to present recipes in which WIC foods are incorporated into dishes families are already eating. Examples of these recipes include: how to mix the WIC-authorized breakfast cereals into Spanish rice, how to convert powdered milk into buttermilk, how to make corn bread and corn pudding with powdered eggs and powdered milk, how to mix infant cereals into meatloaf and cookies, and how to mix milk into soups, macaroni and cheese, and gravies. When new dishes are introduced, they are dishes which are similar to families' current foods; items such as Welsh rarebit, "tea loaf," and vanilla mousse--each of which is a recipe used by some WIC clinics--were the sorts of dishes successful trainers tended

to avoid because of their unfamiliarity to typical WIC recipients. Finally, when suggesting more healthful ways of cooking, gradual transitions seemed to win more participant compliance than more sudden shifts; one successful trainer, for example, waged a campaign against frying in grease by encouraging a gradual reduction of the amount of grease used, rather than advocating that recipients avoid grease entirely.

The next principle is to keep all lessons simple and concrete. All brochures, posters, and recipes should use simple language; terms such as "braise" and "sauté" should be avoided. Whenever possible, ideas should be conveyed with pictures--even in recipes. Recipes themselves should be as simple as possible. They should avoid long preparation times (such as starting the day before), elaborate kitchen equipment (such as electric blenders), or complicated procedures. Food preparation ideas that are extremely easy--such as simply sprinkling WIC-supplied cheese on top of grits, or freezing WIC-supplied juices into popsicles--are especially helpful. Recipes should be distributed only one or a few at a time, rather than in large booklets. Finally, any nutrition principles which are discussed should be extensively illustrated with specific recipes and specific food items, rather than simply discussed in the abstract.

The final principle for successful nutrition education is at once the most important and the one which underlies all the other principles just stated: Make sure each recipient can apply each lesson to her own situation. If nutrition education is conducted in group sessions, either conduct individual counseling follow-ups on a one-to-one basis or conduct the groups as active discussions in which all recipients join and in which specific home situations are considered. When eating difficulties of children are involved, some clinics included children in the nutritional counseling, while other clinics taught parents how to teach their children.

Many of the principles discussed above have been successfully utilized in the Expanded Food and Nutrition Education Program (EFNEP) of the Cooperative Extension Service which is supported in part by the USDA.[8] EFNEP uses non-professional workers as program aides, supervised by professional home

---

[8]See "A Nutrition Education Service for Low-Income Families," by Nancy B. Leidenfrost, Welfare In Review, Volume 1, No. 3, May/June, 1972, pp. 44-52.

economists, to provide nutrition education. One of the primary qualifications necessary to be a program aide is the ability to "identify and communicate with low-income families." Advisory groups made up of the people being served by EFNEP, program aides who speak a foreign language, demonstrations of food preparation, emphasis on ethnic foods, and the use of simple visual aids such as flip charts and pictures from magazines are all important aspects of teaching nutrition in EFNEP.

WIC AND MEDICAL CARE UTILIZATION

It is well known that low-income persons consume less routine and preventive medical care than the majority of Americans.[9] This gap in medical care utilization may remain for low-income persons even when medical services are made available on a free or reduced-price basis, due to inertia, or lack of information about the availability of services, or lack of convenient access.

There is reason to speculate that WIC may have the beneficial side effect of increasing the medical care utilization of WIC recipients and their families. This effect might occur through several mechanisms. One is that insofar as medical examinations are required for WIC eligibility, medical conditions might be detected which otherwise would not be brought to light. Another mechanism is simply a co-location effect. Having already incurred the expense and effort of traveling to the clinic for WIC, the patient "might as well" use the health services while she is there. A third mechanism is that of information and awareness: by visiting a WIC clinic and talking to the staff there, a WIC recipient may become aware of the importance of receiving certain kinds of health care, or she may become aware of the free availability of certain kinds of care.

---

[9] For example, during 1964, the proportion of adult women who visited an obstetrician or gynecologist was 2.8 percent for those with annual family incomes under $2,000, while it was 12.5 percent for those with incomes of $10,000 or more. In the same year, the percent of persons under 17 visiting a pediatrician ranged from 7.5 percent for those with income under $2.000 to 33 percent for those with incomes over $10,000. (Sources for these data are given in Technical Note 1.) For this reason, throughout this section, an increase in medical care visits will always be interpreted as a benefit of the WIC program (a movement toward "normal" levels of utilization) rather than as an undesirable effect (an indicator of poorer health status).

Exhibit 4.3 profiles the medical facilities and services which were available at the health clinics hosting WIC clinics included in the survey. The average host clinic has 22 full-time or part-time staff members, one-third of whom are medical doctors. Eighty-seven percent of clinics operate a well-child clinic, 67 percent operate a family planning clinic, and 60 percent operate a prenatal clinic. In this section we will examine the extent to which WIC has increased the use of these medical facilities in the host clinics.

Does WIC Increase Medical Utilization?

Two types of data were available in the survey for determining the effect of WIC on medical utilization. First, WIC clinic administrators were asked to estimate the number of health clinic visits made by WIC participants and by comparable non-participants. Secondly, WIC participants themselves were asked to indicate the program's effect, if any, on their usage of health clinic facilities. Both sets of responses indicate that participation in the WIC program does increase patients' utilization of health care service offered by the host clinic.

Exhibit 4.4 presents estimates by WIC clinic administrators of the number of medical clinic visits made by WIC participants and comparable persons not participating in WIC. For women, the numbers reported are the number of visits made to a prenatal clinic during the course of a pregnancy; for infants the number is the number of visits to a well-baby clinic made during the first six months of life; and for children, the number refers to visits to a well-child clinic made between one and four years of age. Exhibit 4.5 offers analogous data on the same subject, this time gathered from WIC participants, who were asked to reply yes or no to the question of whether WIC had tended to bring them and/or their children (as appropriate to the family composition) into well-child or prenatal clinics earlier or more often.[10]

According to the clinic administrators, WIC generated increases in medical services usage among all participant groups. As shown in Exhibit 4.4, the

---

[10]Technical Note 2 presents more detailed data and significance tests for administrators' estimates, while Technical Note 3 presents more detailed data and significance tests for these participants' estimates.

EXHIBIT 4.3

Facilities and Services Available at Medical Clinics

Hosting WIC Clinics, April 1975

Facility	Availability
Host Clinic Houses Well-Child Clinic	87% of clinics
Clinic Does Its Own Medical Testing	73% of clinics
Host Clinic Houses Family Planning Clinic	67% of clinics
Host Clinic Houses Prenatal Clinic	60% of clinics
Average Number of Full and Part-time Staff Members at Clinic	22
Average Number of Full and Part-time Doctors	7
Average Number of Full and Part-time Other Medical Staff	12
Average Number of Full and Part-time Social Workers & Outreach Staff	3

Based on 96 clinics

Exhibit 4.4

Administrators' Estimates of the Utilization of Clinic Medical Services by WIC Participants and Comparable Non-WIC Clinic Users

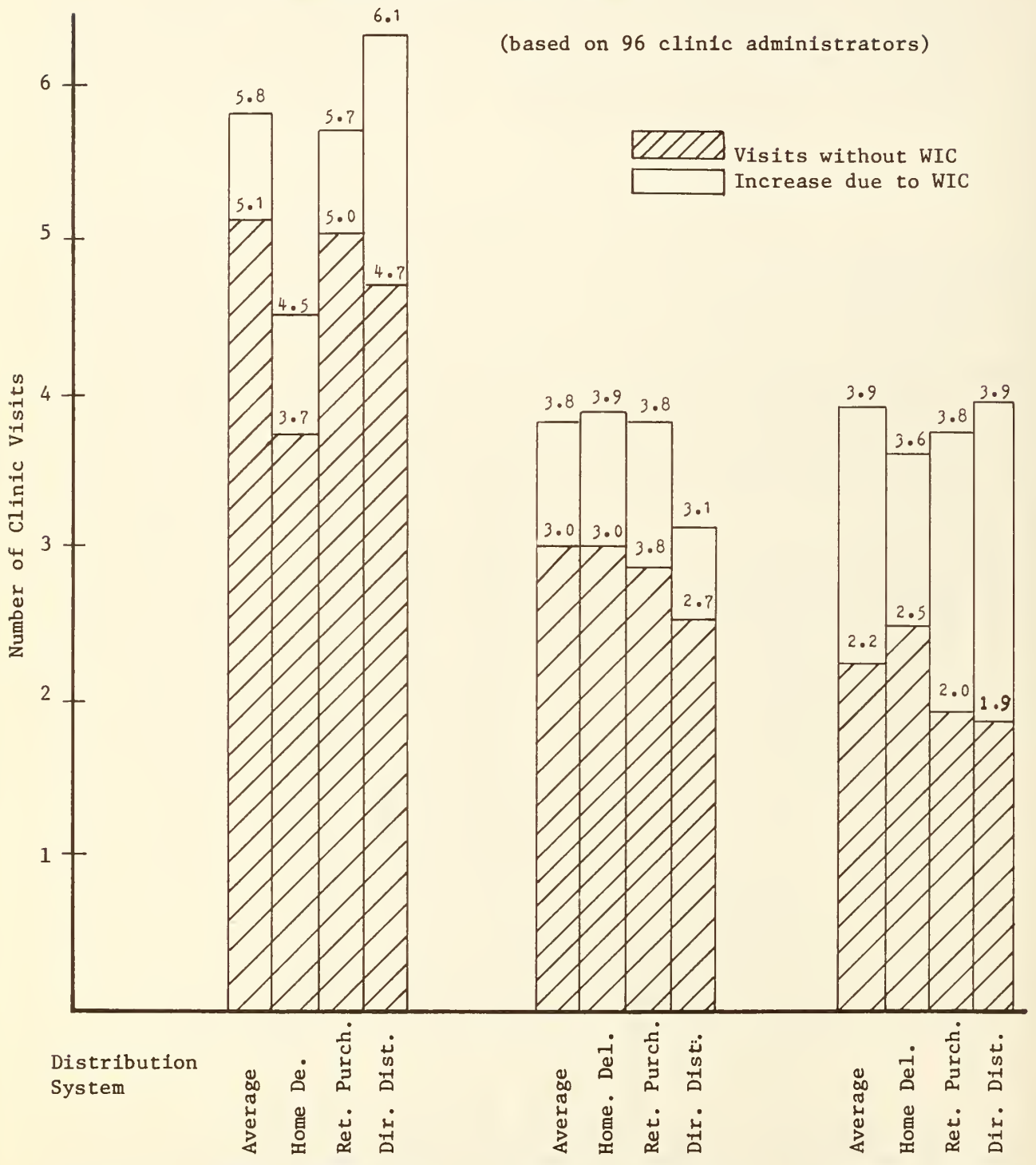
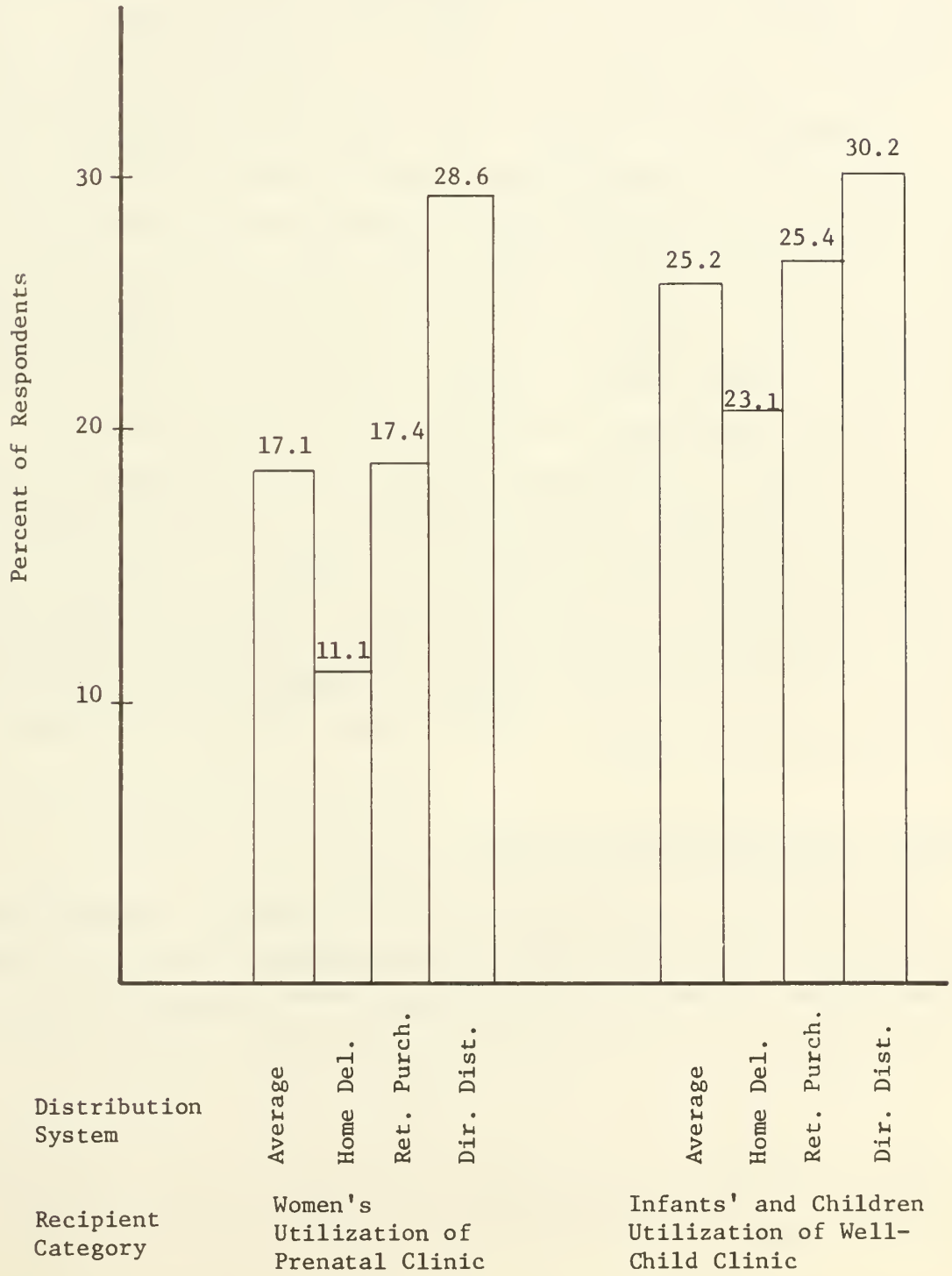


Exhibit 4.5

Proportion of WIC Recipients Reporting that WIC Caused Them to Utilize Health Clinics Earlier or More Frequently (Based on 3590 participant household)



largest increases were reported for children. In the absence of WIC, the average child comes to a well-child clinic only 2.2 times between his first and fourth birthday; WIC is attributed with increasing average utilization to almost four visits during these years, an increase of 1.7 visits or 77 percent. The average number of well-child clinic visits by infants was estimated to increase from 3.0 to 3.8 during their first six months, a 27 percent increase. Women were reported to increase their number of visits to prenatal clinics during one pregnancy from 5.1 to 5.8, an increase of 14 percent.

Administrators also estimated that WIC recipients keep about 78 percent of their health clinic appointments, compared to about 58 percent for the same patients in the absence of WIC.[11] The average of administrators' estimates of the percent of WIC recipients influenced to come to the health clinic because of WIC was 50 percent (including an estimated 10 percent who switched from another health clinic to their clinic in order to obtain WIC benefits). The average of administrators' estimates of the proportion of all new health clinic patients influenced to come in because of WIC was 39 percent.

This pattern of a larger health clinic usage effect among both infants and children and pregnant women is confirmed by the responses among WIC respondents, as illustrated in Exhibit 4.5. Twenty-five percent of households containing any infants or children (whether the infants or children enrolled in WIC or not) reported an increase in clinic utilization by infants and children. Seventeen percent of households containing a woman either pregnant at the time of the interview or recently pregnant reported an increase in their use of prenatal clinics.

Influence of Food Distribution System

Exhibits 4.4 and 4.5 also provide separate medical utilization changes for each of the three main food distribution systems.[12] According to WIC administrators, clinics with direct food distribution systems generated twice as large an increase in prenatal clinic visits as did either home delivery or

---

[11] This difference is significantly different from zero at the .001 level.

[12] Tests of statistical significance for results discussed in this section are presented in Technical Notes 2 and 3.

retail purchase. The estimated increase in prenatal visits is 1.4 in clinics with direct distribution, 0.8 visits in clinics with home delivery, and 0.7 with retail purchase. Direct distribution also has the largest effect in well-child clinic visits by children. Children's visits are estimated to increase by 2.0 with direct distribution, 1.1 with home delivery, and 1.8 with retail purchase. However, direct distribution is least effective in encouraging infant visits, where its increase of .4 visits compares to the increase of .9 obtained by both of the other two distribution systems. This last pattern may be attributable to a tendency to leave infants at home when visiting WIC clinics operating direct distribution systems because of the awkwardness of carrying both groceries and an infant on the return trip. This speculation is consistent with the finding in Chapter 6 that more participants in direct distribution systems report having to make child care arrangements in order to go to the clinic than did participants in other distribution systems.

Responses by WIC recipients also indicate that women's use of prenatal clinics is increased most in clinics with direct food distribution, and well-child clinic visits by infants and children are increased slightly more with direct distribution than under the alternative systems. 28.6 percent of the WIC recipients in clinics with direct distribution reported increases in prenatal clinic utilization, compared with 17.4 percent with retain purchase and 11.1 percent with home delivery. 30.2 percent of those in direct distribution clinics reported increases in prenatal visits, compared with 25.4 percent with retail purchases and 23.1 percent with home delivery.

Personal and Household Characteristics

Exhibit 4.6 compares some personal characteristics of participant households who reported an increase in medical utilization to the characteristics of those which reported no increase. Blacks, participants in rural areas or small cities, and participants who are dissatisfied with their delivery system are less likely than others to increase their medical care utilization as a result of WIC. However, the average welfare ratios of participants who reported increased medical usage and those who did not were similar.[13]

---

[13]Significance tests for the data in Exhibit 4.6 are provided in Technical Note 4.

EXHIBIT 4.6

Selected Characteristics of Participant Households Who Reported That WIC Encouraged Them or Their Families to Utilize Health Clinics Earlier or More Frequently

Characteristic	Participant Households Who Reported an Increase in Utilization[1]	Participant Households Who Reported No Increase	Total
Total	38.1%	61.9%	100%
Ethnic Group:			
American Indian	45.5%	54.5%	100%
Black	29.2%	70.8%	100%
Spanish-American	44.6%	55.4%	100%
White	45.2%	54.8%	100%
City Size:			
Rural or Small City	47.0%	53.0%	100%
Medium or Large City	31.5%	68.5%	100%
Satisfaction With Delivery System			
Satisfied	38.5%	61.5%	100%
Dissatisfied	28.6%	71.4%	100%
Average Welfare Ratio	0.946	0.951	---

Based on 3,590 participant households.

[1]These households reported an increase in use of either prenatal clinics or well-child clinics or both.

Participant responses about increases in medical utilization by infants and children were cross-classified according to proportion of the household which was participating in WIC, with the results shown in the following table:

	Percent of Participant Households Reporting an Increase in the Utilization of Health Care Services by Infants and Children	
	Some Children on WIC	All Children on WIC
No adults on WIC	22.4%	26.5%
Some or all adults on WIC	18.8%	30.2%

(based on 854 participant households)

A higher fraction of the families in which all children participate in WIC, rather than only some of them, report increases in well-child clinic utilization. Similarly, adult WIC participation seems to increase health clinic utilization by children if all children are participating in WIC. Participation of all children in WIC may reflect that the family is a young family.

Clinic Policies

Selecting a food distribution system is not the only program design decision a clinic makes which influences the amount of medical care WIC recipients consume. The following table lists some clinic policies which we speculated might contribute to increases in medical utilization:

Policy	Percent of Clinics Adopting Policy
Require recipient to come in to WIC clinic to receive vouchers or food	87%
Give more laboratory medical tests because of WIC	83%
Explicitly require health clinic use to be eligible for WIC	69%
Coschedule health clinic appointments and WIC appointments[14]	68%
Penalize recipient with lost food if appointment is missed[15]	42%

(based on 96 clinics)

---

[14]Participants' report on the coscheduling of WIC appointments and health clinic appointments were as follows:

This set of policies was investigated to determine their effect on the level of medical utilization of WIC participants, as reported either by WIC administrators or by participants themselves. The effect of each policy was examined by computing the WIC administrator-reported mean increases in prenatal and well-child visits and the WIC recipient-reported mean increases in visits separately for clinics that had adopted that policy and in clinics that had not. No consistent patterns were found. For example, administrators' responses suggested that requiring recipients to come in to the WIC clinic for vouchers or food increased well-child visits, but responses by recipients themselves did not substantiate this effect. None of the medical utilization differences between clinics with and without particular policies was large enough to be considered statistically significant.[16]

CONCLUSIONS

Both participants and administrators agree that participation in a WIC program tends to increase the utilization of health care services. This effect holds true for all categories of WIC participants, with administrators estimating a 14 percent increase in health clinic visits for WIC women, a 27 percent increase for WIC infants, and a 77 percent increase for WIC children. The effect also holds true for all three of the major food distribution systems. Direct distribution systems exhibited the largest gain for children and women but the smallest for infants.

The quantity of nutrition education delivered by WIC programs is substantial, and it represents a substantial increase in this type of activity

(footnote 14 con't.)

Do You Get Medical Examinations at the Clinic on (Some of) the Days You Pick Up Vouchers or Food?	Percent of Participant Households
Yes	32%
Sometimes	24
No	44
Total	100%

(based on 2,983 participant households)

[15]At clinics where the participant loses food if she misses an appointment, the average amount lost was three-and-a-half weeks' worth; the amount ranges from one week's worth to six weeks' worth.

[16]Technical Note 5 reports this analysis.

compared to prior to the WIC program. However, only 12 percent of WIC participants receiving nutrition education indicated that they had learned anything from the effort. That proportion varied widely from clinic to clinic; factors associated with effective nutrition education seemed to include: use of non-professionals in presenting lessons, close tailoring of lessons to the dietary habits and other circumstances of participants, and simplicity of language, concepts, and materials.

TECHNICAL NOTES

1. Sources: E. L. White, "A Graphic Presentation on Age and Income Differentials in Selected Aspects of Morbidity, Disability, and Utilization of Health Services," Inquiry, 5, No. 1, March 1968. National Center for Health Statistics, U.S. Department of Health, Education, and Welfare, Characteristics of Patients of Selected Types of Medical Specialists and Practitioners, U.S., July 1963-June 1964, Vital and Health Statistics, Series 10, No. 28 (Washington, D.C.: U.S. Government Printing Office, 1966).

2. The following three tables refer to administrators' estimates presented in Exhibit 4.4:

	Average	Direct Distribution	Retail Purchase	Home Delivery
Women on WIC				
Mean number of visits	5.82	6.14	5.71	4.50
Variance	7.66	5.84	7.90	10.11
Sample size	72	9	49	14
Women Not on WIC				
Mean number of visits	5.07	4.70	5.00	3.71
Variance	8.50	9.71	8.20	11.20
Sample size	72	9	49	14
Difference Between WIC and Not on WIC				
WIC mean--non-WIC mean (gain)	.76	1.44	.71	.79
Difference as percent of non-WIC visits	15%	30%	16%	21%
t-statistics for difference	1.48	.80	1.30	.60
Significance level for difference	.10	.25	.10	.25
Differences Among Distribution Systems				
Gains for dir. dist.-gains for ret. purch.		.73		
Gains for ret. purch.-gains for home del.			-.01	
Gains for dir. dist.-gains for home del.				.65
t-statistics for difference		2.68	.04	1.15
Significance level for difference		.005	--	.25

	Average	Direct Distribution	Retail Purchase	Home Delivery
Infants on WIC				
Mean number of visits	3.80	3.11	3.85	3.90
Variance	2.01	.77	2.63	1.30
Sample size	90	9	60	21
Infants Not on WIC				
Mean number of visits	2.96	2.66	2.93	3.00
Variance	2.44	.22	2.91	1.90
Sample size	87	9	57	21
Difference Between WIC and Not on WIC				
WIC mean--non-WIC mean (gain)	.84	.45	.92	.90
Difference as percent of non-WIC mean	28%	17%	31%	30%
t-statistic for difference	3.47	1.26	2.15	3.14
Significance level for difference	.001	.25	.025	.005
Differences Among Distribution Systems				
Gains for dir. dist.-gains for ret. purch.		-.47		
Gains for ret. purch.-gains for home del.			.02	
Gains for dir. dist.-gains for home del.				-.45
t-statistics for differences		4.14	.23	2.92
Significance level for difference		.001	---	.005

	Average	Direct Distribution	Retail Purchase	Home Delivery
Children on WIC				
Mean number of visits	3.87	3.88	3.75	3.60
Variance	1.90	2.10	3.40	4.24
Sample size	85	9	56	20
Children Not on WIC				
Mean number of visits	2.22	1.88	1.98	2.50
Variance	2.85	3.43	1.98	3.85
Sample size	78	7	51	20
Difference Between WIC and Not on WIC				
WIC mean--non-WIC mean (gain)	1.65	2.00	1.77	1.10
Difference as percent of non-WIC mean	74%	106%	87%	44%
t-statistic for difference	5.62	2.41	5.48	1.69
Significance level for difference	.001	.025	.001	.10
Differences Among Distribution Systems				
Gains for dir. dist.-gains for ret. purch.		.23		
Gains for ret. purch.-gains for home del.			.67	
Gains for dir. dist.-gains for home del.				.90
t-statistic for difference		1.34	5.81	2.83
Significance level for difference		.10	.001	.005

3. The following tables refer to the participants' responses reported in Exhibit 4.5:

Women	Average	Direct Distribution	Retail Purchase	Home Delivery
Percent saying yes	17.1%	28.6%	17.4%	11.1%
Total number of responses	835	84	189	562
Percent for Dir. Dist.- percent for Ret. Purch.		11.2%		
Percent for Ret. Purch.- percent for Home Del.			6.3%	
Percent for Dir. Dist.- percent for Home Del.				17.5%
t-statistics for difference		1.98	3.43	2.06
Significance level for difference		.025	.001	.025
Infants and Children				
Percent saying yes	25.2%	30.2%	25.4%	23.1%
Total number of responses	3,325	268	2,236	831
Percent for Dir. Dist.- percent for Ret. Purch.		4.8%		
Percent for Ret. Purch.- percent for Home Del.			2.3%	
Percent for Dir. Dist.- percent for Home Del.				7.1%
t-statistic for difference		1.63	2.24	1.33
Significance level for difference		.05	.01	.10

4. Significance tests were conducted for reported differences in medical utilization increases, as shown in Exhibit 4.6. The t-statistics significant at the .05 level are:

Blacks vs. American Indian	3.47
Blacks vs. Spanish-American	6.23
Blacks vs. White	6.93
Rural or small city vs. medium or large city	8.04
Satisfied vs. dissatisfied	2.08

The t-statistics for each of the other ethnic group comparisons and for the difference in average welfare ratios was below unity.

5. The following tables contrast the mean increases in medical utilization reported by administrators and recipients for WIC clinics which have adopted the policies listed in the table and those clinics which have not. In many cases, the pattern of which type of clinic experienced a larger gain is not consistent across categories of participants or between

administrator and participant data. In no case does the t-statistic for difference between clinics with and without the policy exceed 1.1.

Policy	Administrators' Estimate of Mean Increase in Prenatal Visits for WIC Women: For Clinics With Policy	For Clinics Without Policy
Coschedule health clinic appointment and WIC appointment	.64	1.60
Require recipient to come in to WIC clinic to receive vouchers or food	.78	1.20
Give more laboratory medical tests because of WIC	.85	.84
Clinic houses a prenatal clinic	.71	1.08
Clinic houses a well-child clinic	.83	.43
Explicitly require health clinic use to be eligible for WIC	.70	1.00

	Administrators' Estimates of Mean Increase in Clinic Visits for WIC Infants Under 1 Year Old: For Clinics With Policy	For Clinics Without Policy
Coschedule health clinic appointments and WIC appointments	.80	1.29
Require recipient to come in to WIC clinic to receive vouchers or food	.94	.50
Give more laboratory medical tests because of WIC	.84	.95
Clinic houses a prenatal clinic	.98	.65
Clinic houses a well-child clinic	.88	.78
Explicitly require health clinic use to be eligible for WIC	.77	1.09

	Administrators' Estimates of Mean Increase in Clinic Visits for WIC Children 1 to 4 Years Old: For Clinics With Policy	For Clinics Without Policy
Coschedule health clinic appointment and WIC appointment	1.50	1.60
Require recipient to come in to WIC clinic to receive vouchers or food	1.57	1.00
Give more laboratory medical tests because of WIC	1.46	1.69
Clinic houses a prenatal clinic	1.36	1.76
Clinic houses a well-child clinic	1.48	1.75
Explicitly require health clinic use to be eligible for WIC	1.48	1.57

	Percent of Recipients Reporting an Increase in Prenatal Visits to Clinic Because of WIC	
	For Clinics With Policy	For Clinics Without Policy
Coschedule health clinic appointment and WIC appointment	16%	20%
Require recipient to come in to WIC clinic to receive vouchers or food	16	14
Give more laboratory medical tests because of WIC	17	18
Clinic houses a prenatal clinic	17	14
Clinic houses a well-child clinic	16	17
Explicitly require health clinic use to be eligible for WIC	17	13

	Percent of Recipients Reporting an Increase in Number of Well-Child Clinic Visits Because of WIC	
	For Clinics With Policy	For Clinics Without Policy
Coschedule health clinic appointment and WIC appointment	29%	28%
Require recipient to come in to WIC clinic to receive vouchers or food	27	27
Give more laboratory medical tests because of WIC	27	30
Clinic houses a prenatal clinic	26	28
Clinic houses a well-child clinic	27	22
Explicitly require health clinic use to be eligible for WIC	26	28

CHAPTER 5

WIC COSTS

This chapter discusses the costs of operating WIC programs and their relationship to the reimbursement allowed for these costs. It encompasses both administrative costs and food costs.

ADMINISTRATIVE COSTS

Exhibit 5.1 presents estimates for 77 clinics of the total cost to administer WIC programs in April 1975. These figures are stated as monthly costs per recipient. They include all expenditures made by WIC programs whether reimbursed by federal funding or not. They include costs at the clinic itself, plus a prorated share of costs incurred at state and program area offices (if distinct from the clinic). They do not include food costs. These administrative costs range from less than $2 per recipient per month to over $9, and they average $4.92.[1]

Average Administrative Costs

Attention should first focus on this average value of $4.92 per recipient per month. The Child Nutrition Act of 1975 authorizes federal reimbursement of actual administrative expenditures up to 20 percent of total program costs (i.e., of food costs plus administrative costs).[2] This rule can also be stated as 25 percent of food costs.[3] The USDA estimates that the average

---

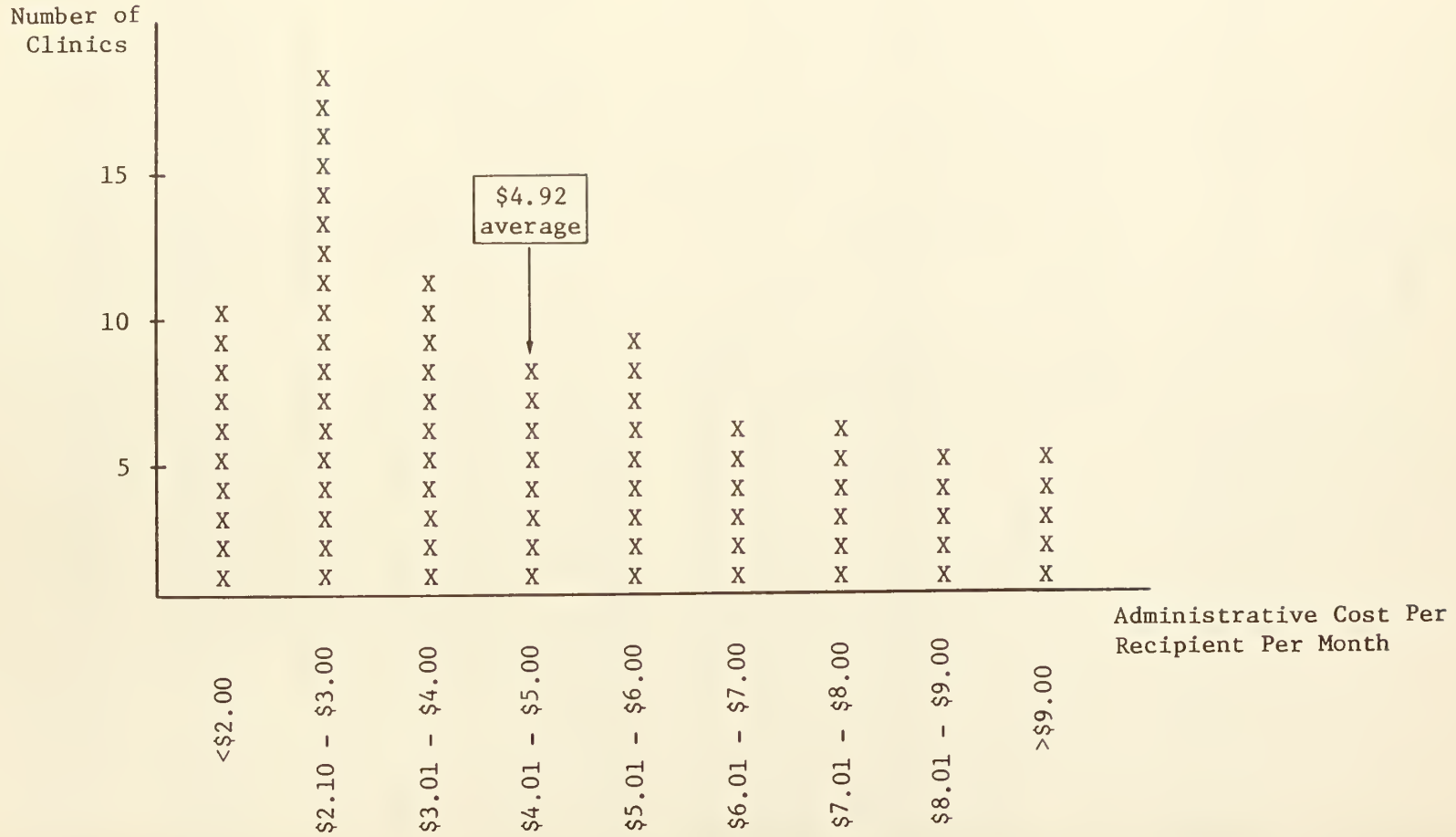
[1] See Technical Note 1 for the derivation of these data.

[2] At the time of the survey in April 1975, the federal reimbursement for administrative expenses averaged 17 percent of total program costs and was composed of an administrative fee of 10 percent of total program costs, plus a separate amount for clinic operations which averaged seven percent.

[3] Actually, it is equivalent to 25 percent of food costs only when the program spends enough on administration to qualify for the full 20 percent reimbursement.

Exhibit 5.1

Monthly Administration Costs Per Recipient
in 77 WIC Clinics, April 1975



monthly food cost per recipient is very close to $20,[4] and 25 percent of $20 is $5.00. Within the range of uncertainty of these estimates, $5.00 and $4.92 should not be considered different from each other. That is, the 20 percent reimbursement formula established in the Child Nutrition Act of 1975 seems to cover the costs of administering WIC for the average WIC program, operating in average circumstances, offering the average set of services, and achieving average efficiency.

Variation in Administrative Cost

The adequacy of reimbursement for the average WIC program is only the beginning of the story, however. Exhibit 5.1 suggests that while the average WIC program experienced allowable administrative expenses, some clinics actually experienced costs as low as $2, while other clinics actually experienced administrative costs as high as $9.

Some types of administrative expenditures were not authorized for federal reimbursement in April 1975. These included all expenditures for nutrition education. For these expenditures--and for those clinics where WIC reimbursement fails to cover all administrative expenses--other funding sources for the medical programs hosting WIC must make up the difference. Exhibit 5.2 shows, for 52 health clinics hosting WIC programs in our survey, some of the sources for other funds. They include a wide range of federal and nonfederal sources. Donations of time also accounted for about one-half of one percent of WIC administrative resources; this includes both unusual unpaid overtime by WIC staff and unpaid activity by volunteers.[5] The WIC administrative budget averaged 14 percent of the total budget of host health clinics.[6]

---

[4] One USDA estimate (based on data on program operations reports on Form 187 for June 1975) was $19.36. A second USDA estimate, based on program applications, was $20.21. We have no data on the variation of food costs among clinics.

[5] In this estimate, unpaid overtime by WIC staff was valued at the regular hourly wage paid to those working overtime. Volunteer time was valued at the wage per hour of a WIC clerk at the clinic where the time was donated.

[6] It ranged from two percent to 46 percent. These proportions refer to the WIC administrative funds programs would earn if clinics were filled to 100 percent of their authorized WIC caseload and received $5 per recipient per month in WIC administrative fees.

EXHIBIT 5.2

Sources of Funding for Health Programs Hosting WIC Programs

Funding Source	Percent of Host Programs Receiving Funds from this Source
Federal Sources	
Maternal and Child Health (Title V of Social Security Act)	56%
EPSDT or Medicaid (Title XIX of Soc. Sec. Act)	52
Family Planning (Title X of PHS Act)	38
Children and Youth (Title IX of Soc. Sec. Act)	25
Federal Mental Health, Alcohol Abuse, or Drug Abuse Programs	23
Federal Head Start or Day Care Programs	19
Neighborhood Health Center (Title III of PHS Act; OEO)	13
Migrant Health Service	13
Indian Health Service	4
Other Federal Sources	56
Nonfederal Sources	
State and Local Government	73%
Private Contributions and Client Fees	33
Nonprofit Organizations (e.g., Planned Parenthood, United Fund)	13
University	8
Nonfederal Head Start or Day Care Program	4
Other Nonfederal Sources	25

Based on 52 WIC programs

Of course, just because some WIC programs spend more on administration than the law provides is not necessarily a reason to grant additional reimbursement. High-cost programs might be inefficient, compared to their lower-cost brethren. Or programs might be offering types of services or quality of service beyond the scope intended by the WIC program. But not all the cost variation observable in Exhibit 5.1 is attributable to variations in efficiency or in policy. Some clinics simply cost more to operate than others not because they offer extra services or because they operate inefficiently but because it is inherently more expensive to provide WIC programs in some settings than in others. Exhibit 5.3 displays some of the major circumstances which influence the administrative costs of WIC clinics, and we now discuss each in turn; the reader should consult Technical Note 2 at the end of this chapter for the statistical regression analysis underlying the results we present in the next paragraphs.

Distribution System. The three main distribution systems differ somewhat in administrative cost. Direct distribution systems are the cheapest, averaging $4.04 per recipient per month.[7] Retail purchase systems, at an average of $4.87 per recipient per month, cost 21 percent more than do direct distribution systems. Home delivery systems are the most expensive of the three systems, averaging $5.04 per recipient per month, or 25 percent more than direct distribution systems.

A note of caution should be kept in mind in interpreting this cost comparison among distribution systems. Some costs associated with direct distribution systems might be higher in the future than these data imply. In particular, warehousing arrangements for WIC foods in direct distribution clinics in April 1975 were often informal; one clinic in the sample stored food in boxes along its hallways, while other clinics used warehouses rendered surplus by recent conversion from the USDA Food Distribution Program to the Food Stamp Program. In the longer run, more expensive warehousing arrangements (including sanitary inspection) would probably have to be made, and the cost of direct distribution operations would rise relative to alternative

[7] In Chapter 6, we shall see that direct distribution systems imposed the highest cost on participants, in terms of such items as transportation costs. It therefore exemplifies the common principle that what decreases costs to the government in running a welfare program often increases the cost borne by program participants.

EXHIBIT 5.3

Monthly Administrative Costs per Recipient at Various Types of WIC Clinics

Factor	Values	Average Administrative Cost Per Recipient (Holding All Other Factors at Average Value)	Cost as Percent of National Average	Cost as Percent of the Lowest-Cost Alternative in the Group
National Average	——	$4.92	100%	100%
Distribution System	Direct Distribution	$4.04	82%	100%
	Retail Purchase	4.87	99	121
	Home Delivery	5.04	102	125
Region	Southeast	$3.50	71%	100%
	West Central	3.86	78	110
	Northeast	4.28	87	122
	Midwest	5.03	102	144
	West	6.99	142	200
Locale	Small/medium city	$4.07	83%	100%
	Rural	5.18	105	127
	Big City	5.23	106	129
Sponsor	City/County Health Department	$4.43	90%	100%
	Private, nonprofit clinic	4.54	92	102
	Hospital	6.75	102	152
Authorized Caseload	10,000	$3.19	65%	100%
	1,000	4.95	101	155
	100	6.71	136	210
Expenditures on Outreach and Nutritional Ed.	None	$3.77	77%	100%
	Most Expensive Observed	8.83	179	213
Laboratory Medical Testing	Not Required	$4.14	84%	100%
	Required	4.94	101	119

Based on 77 clinics

distribution systems; the extent of this potential rise is not known.

It should also be kept in mind in comparing these cost figures that they include both explicit, out-of-pocket administrative expenditures by WIC programs and administrative expenditures which are "hidden" within food costs; these "hidden costs," as we discuss in Technical Notes 1 and 4 at the end of this chapter and in the analysis of WIC reimbursement rules later in this chapter, amount to between 12 and 16 percent of food costs and therefore require substantial adjustment to explicit administrative costs to render a true picture of the costs of WIC administration. When only explicit administrative costs are considered, the home delivery system appears to have the lowest administrative costs of any of the three distribution systems, and the direct distribution system appears to have the highest. This is to be expected, since direct distribution systems have to carry as explicit administrative expenditures the costs of food handling services which home delivery and retail purchase systems purchase from food vendors and incorporate in food costs. But when the full range of administrative costs are considered--as they are in the data presented in Exhibit 5.3--the rank order reverses, to make direct distribution systems least expensive and home delivery systems most expensive.

Region and Locale. Some regions of the country are cheaper to operate in than others. Average costs range from $3.51 in the Southeast to $6.99 in the West, or twice the cost in the Southeast.[8] Similarly, clinics located in small or medium-sized cities (populations 10,000 to 250,000) are the least expensive to operate, at $4.07 per recipient per month; clinics located in rural areas cost 26 percent more, or $5.18 on average; and clinics in large cities (over 250,000 population) cost on the average 29 percent more than clinics in small and medium-sized cities, or $5.23.

Sponsor. Exhibit 5.3 indicates that clinics sponsored by city or county health departments cost an average of $4.43 per recipient per month to administer, while those sponsored by private, nonprofit clinics cost $4.54 on average,

---

[8] Subsequent to our survey in April 1975, the Northeast Region was split into a Mid-Atlantic Region and a New England Region. Our results show an average for the entire former region.

which is only two percent higher. Hospital-sponsored clinics, on the other hand, cost an average of $6.75, approximately 50 percent more than either of these two alternatives.[9]

Program Size. The scale of operation for which a WIC program is intended, represented by authorized caseload, has a major impact on operating costs per recipient.[10] The effect is generated in part from spreading fixed costs (such as the cost of purchasing certain equipment) over a broader base. It may also come from increased opportunities for use of specialized personnel, specialized equipment, and organized procedures. The average clinic with an authorized caseload of 100 costs a little more than twice as much per participant to administer as does the average clinic with an authorized caseload of 10,000.

---

[9]The following table compares the proportions of administrative budgets going to various functions at WIC clinics with different types of sponsors:

Function	Hospital	City/County	Private Non-Profit	Overall Average
General and Fiscal Administration, including issuing vouchers/food	58%	61%	63%	62%
Certification	29	22	24	22
Nutrition Education	8	12	8	11
Outreach	5	5	5	5
Total	100%	100%	100%	100%

(based on 77 clinics)

Hospital clinics tend to spend a little more on certification (mostly on medical testing) than does the average clinic, while city/county health department clinics spend a little more on nutrition education. The primary pattern, however, is that of great similarity among the sponsors.

[10]In making calculations of the effect of authorized caseload on costs, we assumed that actual caseload was 83 percent of authorized caseload. This was the average in the sample of 77 clinics for which we had cost data. For more on the extent to which authorized caseloads are filled, see Exhibit 2.4 in Chapter 2.

Policies. Two further calculations show the effect of some clinic operational policies on costs. Suppose that nutrition education and outreach were thought of as administrative functions which could be separated from the primary operating activities of WIC at the clinic (which are recipient certification, distribution of vouchers or food, and financial and general management). We calculated the average administrative cost for clinics after subtracting each clinic's expenditures for nutrition education and outreach. The average cost then was $3.77, or 77 percent of the average cost for all functions including these two functions.[11] For comparison, we took the outreach and nutrition education expenditures which were the highest of any clinic among the 77 and added them to the 77-clinic average for all other functions. This yielded a monthly administrative cost of $8.83, or 179 percent of the national average for all functions.

Just as decisions about how much to spend on outreach and nutrition education have major impacts on clinics' costs, so do policies on how to determine participant eligibility. Exhibit 5.3 indicates that the average administrative costs for clinics which require laboratory medical tests for eligibility determination was $4.94, or 119 percent of the $4.14 cost at clinics which do not have this policy.

BUDGET AND PERSONNEL ALLOCATIONS

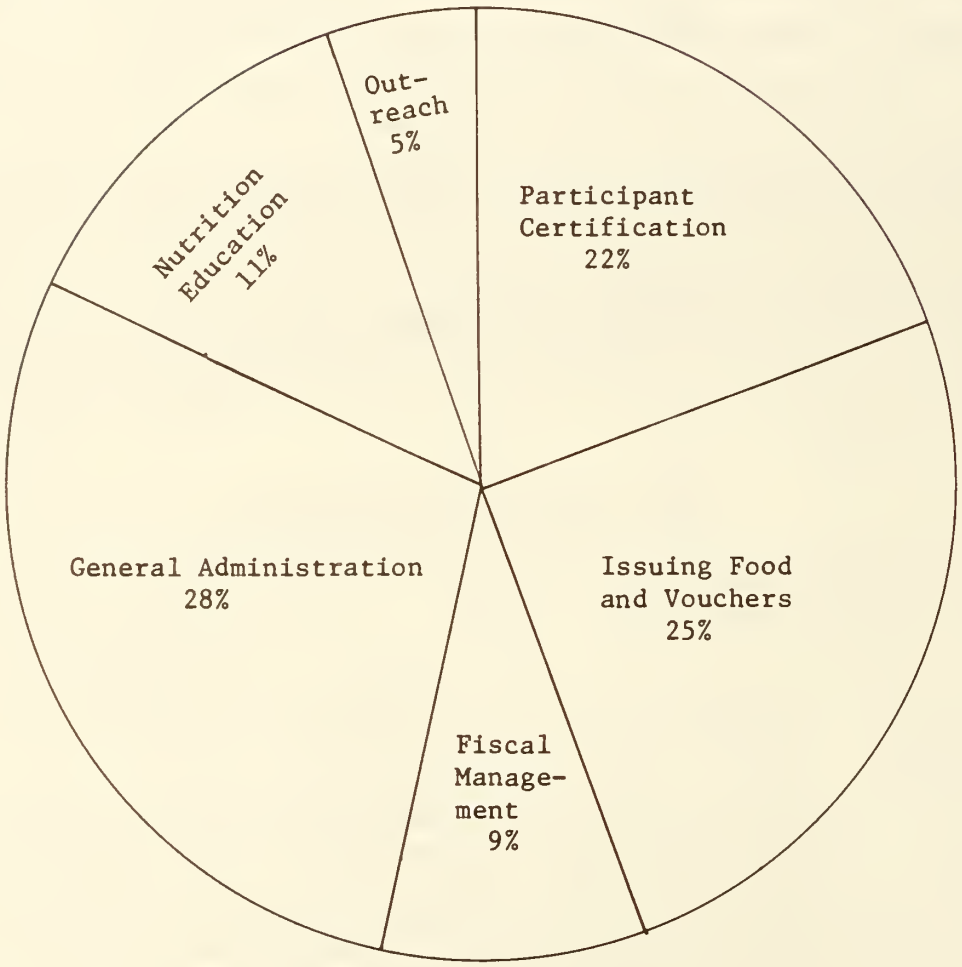
The previous paragraphs have presented an analysis of how much was spent on administrative functions taken together. We shall now discuss what these costs are composed of, in terms of administrative function and in terms of type of personnel. Exhibit 5.4 presents a breakdown of administrative

---

[11] These figures imply that nutrition education and outreach accounted for 23 percent of total WIC expenditures, rather than the 16 percent which we will report in Exhibit 5.4 later in this chapter. The 23 percent figure reports the proportion of all WIC administrative outlays, including both "explicit" administrative expenditures by WIC programs and administrative costs "hidden within" food costs in some distribution systems. The 16 percent figure reports a proportion of only the explicit expenditures. The concept of administrative costs hidden within food costs is discussed in Technical Notes 1 and 4 at the end of this chapter.

Exhibit 5.4

Functional Allocation of
Administrative Costs
(based on 77 clinics)



expenditures by clinics according to administrative functions.[12] General administration claimed 28 percent of all expenditures.[13] The other three "main" WIC functions--participant certification, issuing food or vouchers, and fiscal management--together accounted for 56 percent of expenditures. The "additional service" functions--nutrition education and outreach--comprised 16 percent of expenditures.

Exhibit 5.5 displays the division of personal expenditures by clinics among personnel of various professional backgrounds. In descending order, they are fiscal and administrative personnel (29 percent); clerks, including clerical-level voucher issuance personnel (21 percent); nutrition professionals and nutrition aides (18 percent); social workers (12 percent); nurses and laboratory technicians (12 percent); and physicians (nine percent).[14]

---

[12]Exhibit 5.4 displays budget allocations made under the reimbursement rule in force in April 1975, allowing an average of 17 percent of program costs for administration. The current 20 percent rule allows approximately three percent of total program costs more for administrative costs. Some idea of where this additional three percent is being spent can be gleaned from the following responses by administrators in our survey on what function they would give first priority to in spending a hypothetical five percent budget increase:

Function	Percent of Administrators Giving It First Priority
Nutrition Education	42%
Administration	26
More Food	15
Outreach	11
Medical Testing	6
Total	100%

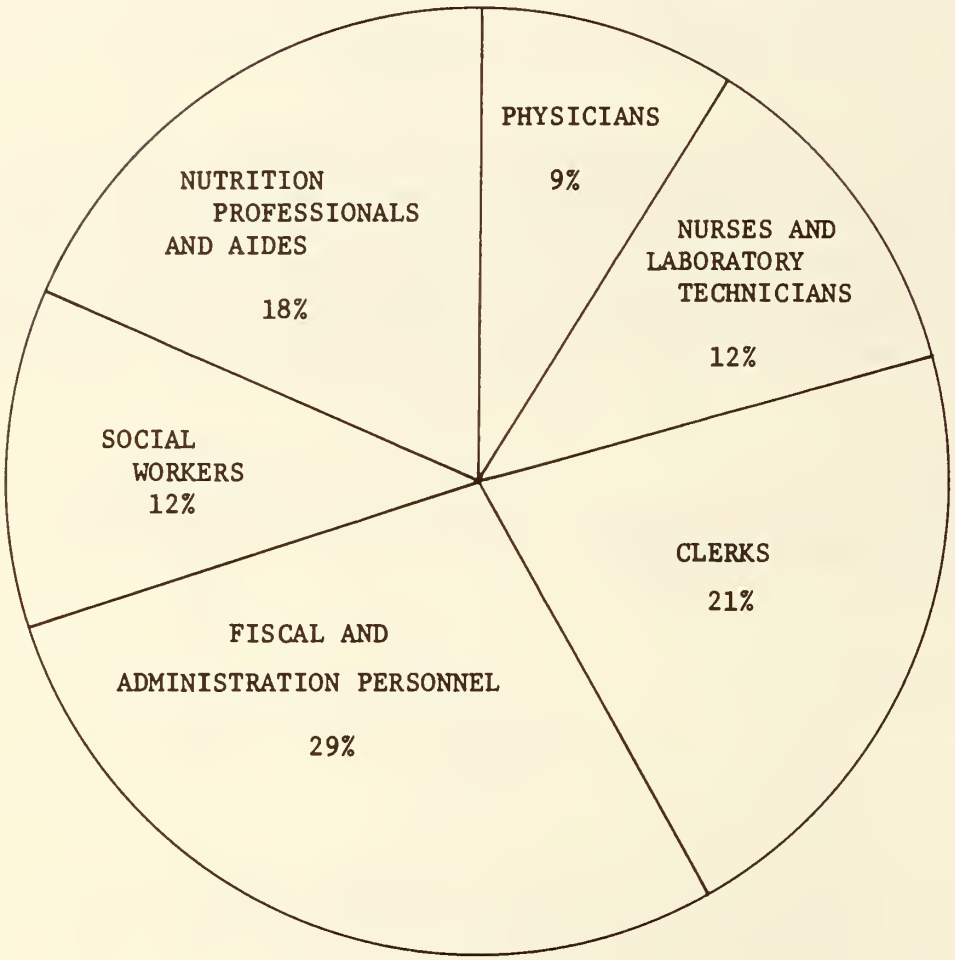
(based on 178 administrators at all levels)

[13]When administrators were unable to separate costs by function, they tended to report them under general administration; hence that category is probably overestimated as a proportion of total costs, while other specialized functions are probably underestimated.

[14]Technical Note 3 brings the data from Exhibits 5.4 and 5.5 together by showing on average what proportion of personnel expenditures for each function goes to each type of personnel and what proportion of expenditures for each type of personnel goes for each function.

Exhibit 5.5

Allocation of Personnel Expenditures
By Professional Background
(based on 77 clinics)



FOOD PURCHASE COSTS

This chapter's discussion of costs so far has concerned only the administrative costs of WIC programs. This section briefly notes some cost aspects of WIC food purchasing policies. This perspective is important, because administrative costs account for only 20 percent of total program costs; the remaining 80 percent of funds go for food.

One way in which cost savings might be achieved in food purchase is for WIC programs actively to seek low prices through such devices as competitive bidding. USDA has examined the benefits and costs of competitive bidding for food purchases in non-WIC contexts such as the School Lunch Program. In one such study, costs savings of between seven percent and 18 percent of food prices were found for using competitive bidding for foods rather than purchases from wholesalers at standard prices.[15] Similar savings might be obtainable in the purchasing arrangements used by certain WIC programs, particularly those operating direct distribution systems, where food is purchased in large lots from wholesalers,or in home delivery systems, where long-term city-wide contracts are often awarded to a single dairy. The survey did not indicate the extent to which competitive bidding is currently used in selecting these vendors.

Sales tax exemptions of WIC food purchases are a second potential area of savings in food costs. Approximately half the states and jurisdictions in which WIC operates impose state or local sales tax on food. Tax rates average about four percent and rise as high as five percent. Many jurisdictions exempt sales to state and local governments from being subject to sales tax, and many jurisdictions exempt sales to nonprofit institutions. Exemptions are sometimes administered by not charging tax at the time of purchase, and sometimes they are accomplished by rebates after collection.

To obtain a sense of the magnitude of potential savings from sales tax rebates, suppose that 80 percent of an annual WIC budget of $250 million is spent on food purchases, that half of WIC clinics are located in jurisdictions imposing sales taxes on food, that half of these clinics could obtain exemptions if they applied, and that the average food sales tax rate is four percent. Then the total value of potential tax exemptions is $2 million per year. Among all

---

[15] Costs of Foods Purchased by USDA and Local School Systems, 1973/74, ERS-592, Economic Research Service of the United States Department of Agriculture, February 1975.

the states and localities contacted in the survey, only one state had sought refunds or exemptions for sales taxation; that exemption had been granted.

THE REIMBURSEMENT FORMULA

The formula by which states are reimbursed for WIC administrative expenditures appears to be straightforward: States are reimbursed their actual costs, up to 20 percent of food costs. Yet there are incentives hidden in this simple rule.

The first set of incentives relates directly to the discussion of food costs in the previous section. There we saw that there may be ways to reduce the price WIC programs pay for food. However, since a WIC program's administrative funds are determined by its food expenditures, cutting food costs simultaneously cuts administrative funding. Most administrators in our survey felt that they had less administrative funding than they needed.[16] Incentives to take advantage of potential cost savings in food purchasing are reduced when cost savings would simultaneously reduce administrative funds.

A second set of incentives in the reimbursement formula involves the choice among distribution systems. "Food costs" are defined in WIC practice to be whatever a clinic pays food vendors to purchase food. What those expenditures represent is quite different in each distribution system, however. In a direct distribution system, payments are for food in wholesale lots sold at wholesale prices. In a retail purchase system, payments are for individual food items sold at retail prices. For food items supplied through WIC, retail purchases average about 16 percent above wholesale prices. In a home delivery system, payments to food vendors include both retail food costs and a charge for delivery service; for WIC foods, that service charge averages about

---

[16] For example, in April 1975 (when they were receiving 17 percent of food costs as their administrative funds), the following proportions of administrators called "very serious" or "moderately serious" these four types of funding shortages:

	Percent of Administrators
Too little money for administrative expenses	81%
No money for startup	69%
Too little money for clinic expenses	53%
Too little money for recipient recruitment & retention	30%

(based on 89 state and program administrators)

12 percent of retail prices. (Technical Note 4 at the end of this chapter presents the derivation of these figures of 16 percent and 12 percent.)

The incentives in the reimbursement formula for selection of a distribution now becomes clearer. By selecting a retail purchase system rather than a direct distribution system, a clinic not only generates a higher administrative fee by paying a higher price for the food, but it also shifts some administrative activities--those of stocking and distributing food--from itself to retail stores. It is paid about 16 percent more administrative fee and at the same time has to do approximately 16 percent less work (assuming that it costs the clinic the same to distribute the foods as it does a retail store). To restate the situation in monetary terms, for each dollar of retail food cost, a retail-purchase system will be paid $.20 in administrative fee. If that clinic were to shift to a direct distribution system, it would be spending only $.84 for the same food and therefore would receive only $.17 in administrative fee. Some of that $.17 administrative fee--perhaps as much as $.16--would be needed to substitute for the food-handling operations which a retail store might provide. That leaves perhaps only about $.01 to fund the clinic's other administrative expenses. This $.01 compares unfavorably to the $.20 the same clinic could have as a retail purchase system.

A similar financial advantage is present in the case of clinics utilizing home delivery systems. Suppose that the hypothetical retail purchase clinic described in the previous paragraph were to switch to a home delivery system. For each dollar it formerly spent to purchase food, it would then spend $1.12. It would receive 20 percent of $1.12, or $.22, in administrative fees. At the same time, it would shift some administrative functions, such as billing and inventory management, to dairies. If we assume that it shifts a full 12 percent worth, then we could think of its receiving $.22 in fees and $.12 in reduced expenses, or $.34 worth of administrative fees to support its other administrative functions. This $.34 compares favorably to its previous $.20.

There are therefore clear incentives to clinics to shift away from direct distribution systems to retail purchase systems and from retail purchase systems to home delivery systems. For each $.01 of administrative fee a direct delivery system is reimbursed, a retail purchase system, in effect, is granted $.20, and a home delivery system is granted $.34. If it is desired to do so, this incentive effect could be removed by adjusting "food costs" to some common basis before computing administrative fees. Adding about 16 percent to

wholesale prices and subtracting about 12 percent from prices paid to commercial dairies would remove half of the effect, by giving all clinics the same amount of administrative fee per physical quantity of foods. The remainder of the effect would be removed by allowing extra administrative fees to direct distribution systems for their food handling activities and requiring that the extra-high price of dairy delivery be considered an administrative cost.

PROBLEMS OF STARTUP AND CASH FLOW

New clinics cost more per recipient to operate than established ones. Exhibit 5.6 shows the distribution of administrators' estimates of startup costs as a percent of the first year budget; Technical Note 5 at the end of this chapter describes the data underlying these results. Within the wide range of estimates displayed, the mean is 4.1 percent of the total first-year budget (administrative costs plus food costs), or about 20 percent of the year's administrative funds.[17] These costs refer to the total startup costs accumulated at state, program area, and clinic offices. Therefore, smaller startup costs would accrue to the process of opening an additional program area within an existing state operation or opening a new clinic within an operating program area.

---

[17] Footnote 16 of this chapter reported that 69 percent of state and program area administrators in April 1975 characterized absence of startup funds as a "very serious" or "moderately serious" problem. (Startup costs became reimbursable in WIC regulations issued in January 1976.) Administrators also stated that lack of guidance during startup was a problem, as the following table indicates:

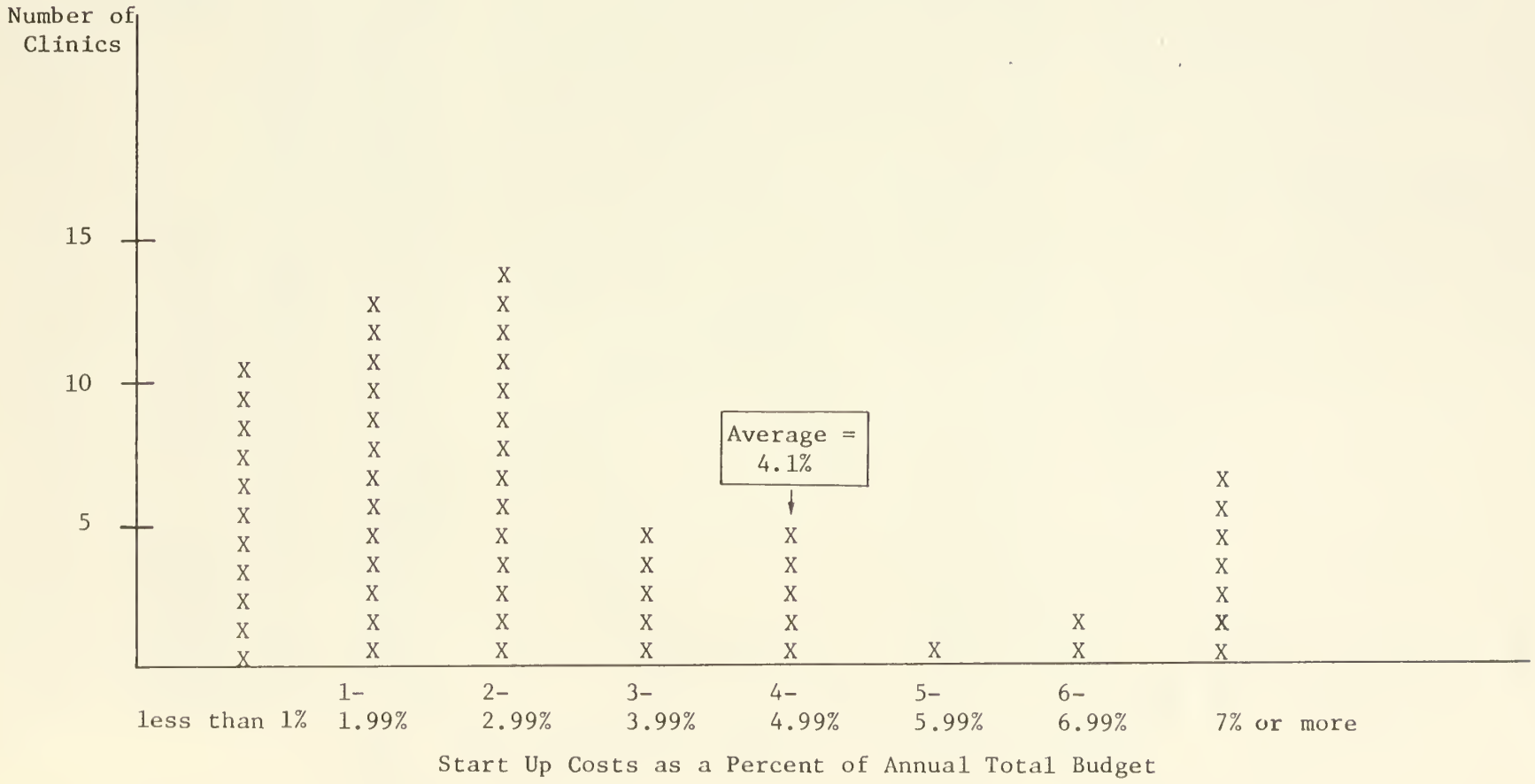
Type of Guidance	Percent of State and Program Area Administrators Calling Absence a "Very Serious" or "Moderately Serious" Problem
USDA Guidance for startup	61%
USDA Guidelines for program area applications	41%

(based on 84 state and program area administrators)

Exhibit 5.6

Start Up Costs as A Percent of A WIC Program's
Annual Total Budget, April 1975

(based on 58 Clinics)



Startup costs consist in part of nonrecurring (or one-time-only) costs such as those incurred in designing vouchers. They also consist of the extra costs of operating new clinics with idle capacity when caseloads are initially being filled. We saw in Exhibit 2.4 of Chapter 2 that many clinics' caseloads approach authorized caseloads only slowly. This means that the budget which a typical WIC program will require for its first year of operation will be substantially less than the amount which it would expend if operating at full capacity. Exhibit 5.7 shows the extent to which cumulative expenditures of the average clinic lag behind its "full caseload" budget during the clinic's first year; the Exhibit implies that 60 percent of the full caseload budget is perhaps a reasonable planning factor for budget requirements during a clinic's first year.

The slow growth of caseloads interacts with more general cash flow difficulties which some clinics reported experiencing. In some cases, clinics' outflow of expenditures takes place a long time before reimbursements for these expenditures are received. One source of time delays is the practice of basing reimbursements on vouchers cashed rather than vouchers distributed. Time may pass between when a clinic issues a voucher and when a participant uses the voucher to purchase food. Additional time may pass between when food is purchased with the voucher and when the voucher is submitted by retailers to the WIC offices for reimbursement.[18] After vouchers or bills are submitted by food vendors or after internal administrative costs are calculated, the movement of reimbursement payments from federal to state to local offices also normally involve some time lag. Program offices reported that the normal number of days which elapsed between the time they calculated their food costs

---

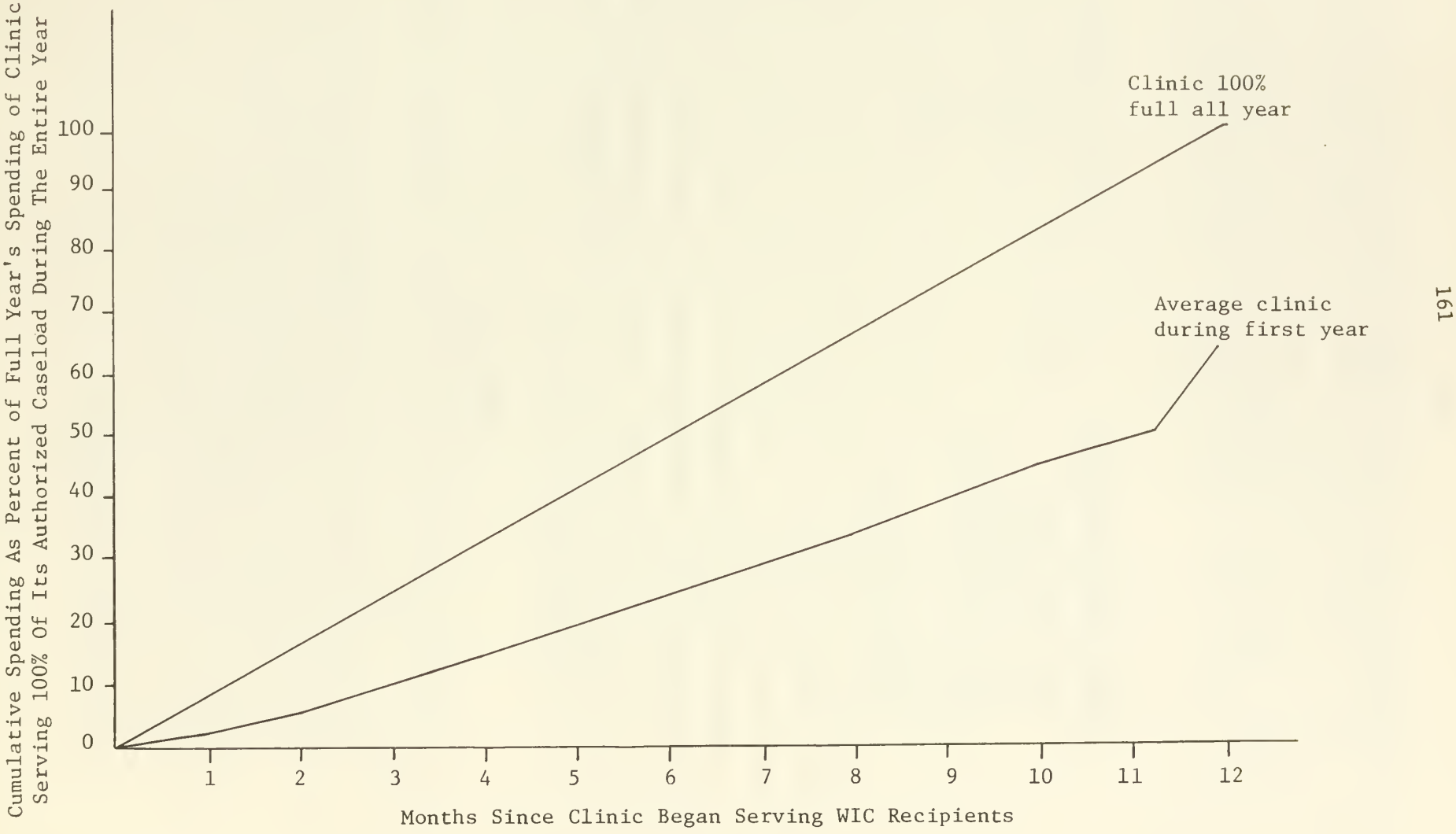
[18] Because not all vouchers are ever cashed or are cashed with variable delay, there is an element of uncertainty in clinics' cash planning. The following table presents administrators' estimates of how frequently they encounter the circumstance of vouchers not being redeemed:

Vouchers Issued and Not Redeemed	Percent of Administrators
Very frequently or frequently	13%
Occasionally or not very frequently	62%
Almost never	25%
Total	100%

(based on 68 program area and state administrators in systems using vouchers)

Exhibit 5.7

Typical Clinic Spending During First Year Compared
To A Clinic Operating At 100% Authorized
Caseload For The Full Year



(based on data in Exhibit 2.4)

and when the program area office receives its administrative fees is 33 days (with a range from zero days to 100 days); their reports of the maximum number of days they ever experienced averaged 63 days (with a range from zero to 180 days). State offices were asked the normal number of days which elapsed between the time they submit a request for federal reimbursement and when they receive a check; their responses are indicated in the following table:

Federal Disbursement Time	Percent of States
One to five days	21%
Six to ten days	47
Eleven to fifteen days	21
More than fifteen days	11
Total	100%

(based on 28 states)

State offices were also asked about the limitation of the size of drawdowns they can make on the Federal Treasury. The current rule is that the size of any one reimbursement is limited to the amount they need to operate for three days. Forty-three percent of the state offices in the survey said that this limitation caused them administrative problems, while 57 percent said that it did not; the most common complaint from those offices saying that it did cause problems were that the rule created extra paperwork and that it caused them to have to borrow operating funds.

CONCLUSIONS

This analysis of the costs of WIC as of April 1975 supports several conclusions.

(1) The cost to administer WIC in the average WIC clinic was $4.92 per recipient per month, which exceeded the reimbursement allowed at that time (17 percent of food costs), but which is exactly covered by current federal reimbursement of $5 per recipient per month (which is based on 20 percent of food costs).

(2) There was considerable variation among WIC programs away from this $4.92 average--from as low as $2 per recipient per month to as high as $9. Within this variation:

- Direct distribution systems averaged $4.04 (82 percent of the national average of $4.92), retail purchase systems averaged $4.87 (99 percent of the national average), and home delivery averaged $5.04 (102 percent of the national average).

- Among regions of the country, costs varied from $3.50 (71 percent of the national average) in the Southeast to $6.99 (142 percent of the national average) in the West. Costs were lowest in small and medium-size cities and higher in rural areas and large cities.

- Clinics sponsored by hospitals cost more to administer than do those operated by other types of sponsors. Clinics with small caseloads, clinics which engage in extensive nutrition education, and clinics which require laboratory medical tests as part of eligibility determination all experienced costs above the national average.

(3) WIC programs in April 1975 spent 28 percent of their administrative costs on general administration, 25 percent on issuing food and vouchers, 22 percent on participant certification, 11 percent on nutrition education, nine percent on fiscal management, and five percent on outreach. They spent 29 percent of their personnel costs for fiscal and administrative personnel, 21 percent for clerks, 18 percent for nutrition professionals and aides, 12 percent for nurses and laboratory technicians, 12 percent for social workers, and nine percent for physicians.

(4) While administrative costs accounted for 20 percent of total program costs, food purchase costs accounted for the remaining 80 percent. Possible areas of cost reduction in food purchase include utilization of competitive bidding and sales tax exemption.

(5) Administrative cost reimbursement to WIC programs is computed as 20 percent of whatever a program pays for food. Because food costs are calculated at wholesale prices in the case of direct distribution systems, retail prices in the case of retail purchase systems, and retail prices plus a delivery charge in the case of home delivery systems, clinics can substantially increase administrative cost reimbursements by choosing retail purchase over direct distribution and home delivery over retail purchase as their food distribution system.

(6) Costs to start up a new WIC program average about four percent of the first year total budget for the program.

TECHNICAL NOTES

1. Eliciting accurate and comparable administrative cost information from WIC clinics was difficult. Respondents often were medical rather than financial personnel, and the WIC program imposes few uniform reporting requirements. We adopted the following procedure to generate the data upon which Exhibits 5.1 and 5.3 through 5.7 are based:

   a) Administrators were asked to list all personnel working on WIC (whether paid by WIC funds or not), indicate the proportion of time each employee spent on various functions, and specify his/her salary and fringe benefit rate. We multiplied to obtain personnel costs per month (covering both wages and fringe benefits), both total and for each administrative function.

   b) We assumed that for each $1 of personnel costs, $.33 of non-personnel costs were incurred. These costs include facilities, supplies, and services (except for service contracts with bank and management firms). This one-third ratio appeared to hold in both our survey data and in FNS applications data; but data were too crude to permit tailoring separate ratios to different types of personnel or different functions.

   c) We added service contract fees to the above total and attributed 100 percent of them to the fiscal management function.

   d) The above data were collected at state, program area, and clinic levels separately. Prorated shares of state and program area costs were computed on the basis of the ratio of state and program area actual caseloads to clinics' actual caseloads. These prorated shares were added to 100 percent of the clinic-level costs, to obtain total administrative costs incurred at all levels of administration to support operations of the clinic. After eliminating clinics for missing data or uninterpretable data, we retained a sample of 77 clinics out of the original 96.

   e) The values computed in steps a) through d) were divided by each clinic's actual caseload in March 1975 to restate them as costs per recipient.

   f) To these data on explicit administrative costs, we added an estimate of administrative costs hidden in food costs. The intent was to adjust data for all distribution systems to a retail purchase basis. As Technical Note 4 explains, home delivery dairies charge an average of 12 percent above retail store prices for food, in return for which they provide delivery to the recipient's doorstep and handle some accounting. Since $20 is the average monthly cost of food, we added

12 percent of $20, or $2.40, to the average administrative cost per recipient of each dairy delivery clinic. Direct distribution systems, on the other hand, are getting fewer administrative services from their food vendors than do retail purchase systems. We estimated that the difference between wholesale and retail food prices for the WIC food items averages 16 percent of retail prices. Since direct distribution systems substitute their own activities for food handling by retail stores, we "credited" them with 16 percent of $20, or $3.20 per month of administrative costs. That is, we subtracted $3.20 from their explicit administrative costs, to give their administrative costs for the same level of services as a retail purchase distribution system. (It should be noted that Exhibits 5.4 through 5.7 are based on explicit costs only and do not include these "hidden" administrative costs.)

2. The analysis in Exhibit 5.3 is based on a regression with total administrative cost per recipient per month as the dependent variable and the following independent variables:

Variable	Regression Coefficient	Standard Error	t Value	Mean Value of Variable
Intercept	7.46	-	-	-
Clinic uses home delivery[1]	-.68	.77	.89	.27
Clinic uses retail purchase[1]	1.55	1.00	1.54	.77
Clinic uses direct distribution[1]	3.92	1.23	3.21	.10
West central region[1,2]	-.42	.84	.50	.21
Western region[1,2]	2.71	.07	2.79	.13
Midwest region[1,2]	.75	.88	.85	.23
Southeastern region[1,2]	-.80	.91	.88	.14
In authorized caseload	-.07	.84	1.01	6.36
In actual caseload	-.84	.83	.09	6.17
Rural locale[1,3]	1.11	1.16	1.02	.08
Big city locale[1,3]	1.08	.65	1.80	.38
Hospital sponsor[1,4]	2.32	1.16	2.01	.06
Private, nonprofit sponsor[1,4]	.11	.65	.17	.27
Laboratory medical test required	.80	.62	1.30	.58

[1] [2] Stratifying variable with 1 = yes
[3] Northeast is the omitted category
[4] Small/medium city is the omitted category
City-county health department is the omitted category

For this regression, R^2 = .47, and F = 3.91. The data base is the 77-clinic sample described in Technical Note 1.

To compute the "overall average" figure which appears in the first line of Exhibit 5.3 requires a two-stage process. First, the mean value of each variable is substituted into the above regression. This yields a value of $4.72 per recipient per month for "explicit" administrative costs.

To this value, we added the average value for administrative costs "hidden" in food costs, which was $.20. This $.20 figure is the average in the 77-clinic sample of the $2.40 hidden in food prices in dairy delivery systems, the -$3.20 hidden in food prices in direct distribution systems, and the zero amount hidden in food prices in retail purchase systems (as discussed in Technical Notes 1 and 4). Addition of the $.20 "hidden" costs to the $4.72 explicit costs produced the $4.92 value displayed in Exhibit 5.3.

The procedure for producing the other values displayed in the exhibit was parallel to that for the overall average: First all variables in the regression equation were set at their mean values except the one variable which was systematically to be studied; that variable was varied systematically to produce the results shown in the exhibit. For example, while holding all other variables at their mean values, a caseload of 10,000 was first substituted and the average administrative cost calculated; then a caseload of 1,000 was substituted in its place and the cost recalculated; then a caseload of 100 was substituted. After that series of calculations had produced estimates for "explicit" administrative costs, the appropriate "hidden" administrative costs were added to the regression results; that amount was $.20 for all parametric exercises except that for distribution system (where zero, -$3.20, or $2.40 were used, as appropriate).

3. The following table shows the proportion of personnel expenditures for each administrative function which clinics spent for each major type of personnel. It therefore indicates what sort of employee typically performs each function.

Function	Type of Personnel	Percent of Personnel Costs for that Function
General Administration	Administrative/fiscal staff[1]	64%
	Clerks[2]	17
	Nutrition professionals & aides	8
	Nurses & lab technicians	5
	Social Workers	5
	Physicians	1
	Total	100%
Issuing Vouchers/Food	Clerks	52%
	Administrative/fiscal staff	16
	Nutrition professionals & aides	14
	Social Workers	11
	Nurses & lab technicians	6
	Physicians	1
	Total	100%

Function	Type of Personnel	Percent of Personnel Costs for that Function
Certification	Nurses & lab technicians	30%
	Physicians	25
	Nutrition professionals & aides	16
	Clerks	12
	Administrative/fiscal staff	12
	Social Workers	5
	Total	100%
Nutrition Education	Nutrition professionals & aides	55%
	Clerks	15
	Nurses & lab technicians	10
	Administrative/fiscal staff	10
	Social Workers	7
	Physicians	3
	Total	100%
Fiscal Management	Administrative/fiscal staff	72%
	Clerks	11
	Nutrition professionals & aides	7
	Nurses & lab technicians	5
	Social Workers	3
	Physicians	2
	Total	100%
Outreach	Social Workers	51%
	Physicians	18
	Nurses & lab technicians	8
	Nutrition professionals & aides	8
	Clerks	8
	Administrative/fiscal staff	7
	Total	100%

(based on 86 clinics)

[1]This category includes the clinic director.

[2]This category also includes miscellaneous non-professional employees (e.g., bus drivers) and volunteers.

The next table shows how the percent of personnel expenditure for each major type of personnel is spent for each major function: It therefore indicates, in effect, how WIC personnel of various backgrounds spend their working time.

Category of Personnel	Function	Percent of Personnel Costs for that Category
Administrative Staff (including clinic director)	General Administration	49%
	Fiscal Management	19
	Issuing Vouchers/Food	14
	Certification	10
	Nutrition Education	5
	Outreach	3
	Total	100%
Clerks, Volunteers, and Miscellaneous Non-professionals	Issuing Vouchers/Food	50%
	General Administration	18
	Certification	13
	Nutrition Education	10
	Outreach	5
	Fiscal Management	4
	Total	100%
Nutritionist, Dieticians and Nutrition Aides	Nutrition Education	43%
	Certification	22
	Issuing Vouchers/Food	16
	General Administration	11
	Outreach	5
	Fiscal Management	3
	Total	100%
Nurses and Laboratory Technicians	Certification	57%
	Nutrition Education	12
	Issuing Vouchers/Food	12
	General Administration	9
	Outreach	8
	Fiscal Management	2
	Total	100%
Social Workers	Outreach	51%
	Issuing Vouchers/Food	19
	Certification	11
	General Administration	9
	Nutrition Education	8
	Fiscal Management	2
	Total	100%

Category of Personnel	Function	Percent of Personnel Costs for that Category
Physicians	Certification	64%
	Outreach	24
	Nutrition Education	4
	Issuing Vouchers/Food	3
	General Administration	3
	Fiscal Management	2
	Total	100%

(based on 86 clinics)

4. The 16 percent estimate is based on "gross margin" data for supermarkets published in the July 1975 issues of Progressive Grocer and Chain Store Age. The gross margin is the difference between retail and wholesale prices, stated as a percent of the retail price; for items in the WIC food package, the unweighted average gross margin was 14.3 percent for the Progressive Grocer data (based on a 6-store sample in March 1974) and 16.7 percent for Chain Store Age's data (based on a 1,265 supermarket sample reporting 1974 averages). We chose to use 16 percent as a reasonable approximation. Within the set of WIC foods, gross margins ranged from 5.9 percent for dairy products to 26.6 percent for apple juice. The 12 percent estimate for the extra charge for home delivery is based on one single piece of data, that for home delivered half-gallon containers of fluid milk in December 1973; further price comparisons were not readily obtainable. Because of the limited nature of these data bases, both the 16 percent estimate and the 12 percent estimate should be treated as approximations only; the orders of magnitude are certainly more reliable than are the precise numbers.

5. These administrators' reports of startup costs are not very systematic. In many cases, they are based only on administrators' recollections rather than on accounting records. In some cases, they include capital expenditures (such as renovation of clinic building or purchase of blood-test equipment) which should be treated as capital outlays and depreciated rather than considered an expense of startup. In some cases, they include early operating expenses (such as printing the first batches of vouchers). But in most cases they also include outlays which are properly accounted as costs of startup, including the costs of designing vouchers, travel to the state capital for organizational meetings, and recruiting and training of staff. It is therefore probably most appropriate to think of these numbers as administrators' subjective estimates of what startup required rather than as objective accounting information.

CHAPTER VI

WIC OPERATIONS

The efficiency and effectiveness of the WIC program depends not only on policy decisions made in Washington, D.C., but also on operational and administrative decisions made at state, program area, and clinic offices. This chapter focuses on a number of operating procedures formulated at state, program area, or clinic levels. The purpose is to describe these procedures, to indicate the extent of variation among WIC programs, and, where possible, to determine the satisfaction of WIC administrators, participants, and food vendors with the procedures. We first discuss the division of responsibility between state offices and program area offices. This is followed by a discussion of voucher design. Next we examine the relationship between WIC programs and food vendors. Then we deal with special operating procedures for home delivery and direct distribution systems. Finally, we discuss participants' degree of satisfaction with WIC administrative procedures and also the cost (in terms of time, money, and inconvenience) required by participation in the program.

THE DIVISION OF LABOR BETWEEN STATES AND PROGRAM AREAS

In the WIC program, the USDA passes funds to state departments of health (or equivalent agencies), and these state agencies are responsible for operating the program. States are free to choose whether to assign a major role to themselves or to delegate program decisions and operations to largely-independent program areas. It is not surprising, therefore, to find wide variations in the actual structure of WIC operations. At one end of the spectrum, the state agency merely served as a conduit of funds and general coordinator, with operating decisions being made by separate WIC program areas. At the other end of the spectrum, some state agencies made most operating decisions, either for all WIC activities in

the state or for only those in certain geographical areas of the state. In these latter cases, the state agency retained most or all administrative monies, established policies and procedures, and directly supervised operating clinics. The intermediate position between these polar extremes was spanned by a variety of arrangements with varying degrees of centralization.

One indicator of the degree of centralization is the extent to which decisions are made at the state level or delegated to program area level. For 59 percent of the clinics in the sample, the state office issued guidelines for participant eligibility. For 49 percent of the clinics, the state office handled reimbursement to food distributors, and in 60 percent of the clinics in which vouchers were used by recipients, the voucher had been designed at the state level.

Another indicator of the degree of centralization in a state's operation is the distribution of administrative funds. At the time of the WIC survey in April 1975, federally-allowable administrative costs (including "clinic costs") averaged 17 percent of total program costs.[1] In 8 percent of clinics sampled, the entire 17 percent was utilized by the state office itself and in clinics the state office directly controlled. At the opposite extreme, in 20 percent of the clinics, all administrative funds were passed through to the program area level, and none was retained for the state office. For the remaining 72 percent of clinics, the state office and program area offices divided the money; in those clinics an average of 13 percent was passed down by the state to the program areas, while the state retained an average of 4 percent.

The following table indicates, for the average WIC clinic sampled, the proportion of the total personnel budget expended at the state level and at the program area level for each major type of administrative function.[2]

---

[1]This 17 percent figure was explained in Chapter 5.

[2]In this table and the following one, where state offices directly operate clinics, clinic expenditures are reported as part of state expenditures; where states do not operate clinics, clinic expenditures are reported as part of program area expenditures. States directly operated 8 percent of clinics in the sample. Therefore, functions in which state offices expend more than 8 percent of administrative funds are functions in which state offices appear to be specializing.

Function	State offices	Program area offices and their clinics	Total
General administration	16%	84%	100%
Fiscal management	38	62	100
Issuing food/vouchers	9	91	100
Recipient certification	7	93	100
Nutrition education	12	88	100
Outreach	*	99	100

(based on 96 clinics)

*Less than 1 percent

The table indicates that state offices tend to specialize in administrative and fiscal management functions. State offices also seem to spend more money on nutrition education than would be expected for the clinics they operate directly, indicating that at least some state offices are perhaps providing nutrition education services or support to program areas and their clinics. Further evidence of this functional division of labor is given by the staffing patterns at the state and program area offices, as reflected in the proportion of personnel expenditures at each level for the services of various categories of personnel. These are shown in the following table:

Category of personnel	Proportion of total personnel budget for the office	
	State offices	Program area offices and their clinics
Administrative personnel (including clinic director)	58%	23%
Clerks, volunteers, and miscellaneous nonprofessionals	11	23
Nutrition professionals and aides	16	18
Nurses and laboratory technicians	8	12
Social workers	5	13
Physicians	2	11
Total	100%	100%

(based on 96 clinics)

Given the above-listed variations in operational organization, it is reasonable to wonder whether there is any detectable associated variation in outcomes. Only 8 percent of clinics could be uniquely identified as being operated at the state level (as indicated by the states' retaining all administrative funds). In comparing these clinics to clinics operated by program areas, there was no discernible difference between state or program level-operated clinics along any of the following dimensions: degree of administrator satisfaction with the payment procedure, frequency of complaints about lack of adequate start-up funding, frequency of complaints about lack of funds for project administration, or degree of participant satisfaction with the way they receive their foods.

VOUCHER DESIGN

Seventy-three percent of survey clinics reported using vouchers for retail purchase distribution, 2 percent used them for home delivery, and 3 percent used the same voucher system for both retail purchase and home delivery. No clinic surveyed used vouchers in conjunction with a direct distribution system. In 60 percent of clinics using vouchers, vouchers were designed at the state level, and in the remainder they were designed at the program area or clinic level.

Voucher Characteristics

Exhibit 6.1 gives some sense of the variation in the characteristics of vouchers used in the various programs. Some notable characteristics of voucher design, and their likely consequences for WIC operations, include the following:

(1) Voucher processing. Vouchers themselves range from crudely produced, mimeographed slips of paper to official-looking forms designed

Exhibit 6.1

Characteristics of Vouchers in Use at 72 WIC Clinics in April 1975

Characteristics	Percent of clinics
Carries expiration date	97%
Lists authorized kinds of foods	96
Requires recipient signature for use	96
Lists authorized quantities of foods	94
Carries serial number	90
Separate voucher for each recipient in household	89
Carries individual food prices or maximum dollar value	65
Carries original signature of authorizing official	64
Indicates category of recipient (woman, infant, child)	60
On safety paper ("check" paper)	53
Requires identification card for use	53
Carries rubber stamp or seal	52
Printed with magnetic ink	46
Color coded	39
Lists authorized redemption centers	36
Separate voucher for each type of food	25
On computer card	13
Displays pictures of food	8
Written in more than one language	6

(based on 72 clinics using vouchers)

as part of computerized data processing systems.[3] Thirteen percent of clinics used vouchers which were on computer cards.[4]

(2) Lists of foods. Nearly all vouchers (96 percent of sampled clinics) include a specific list of allowable foods. Such a list presumably provides some control against purchases of unauthorized foods. The lists themselves, however, vary in terms of specificity. Some authorize, for example, "breakfast cereals," while others list particular brand names; some "lists" are no more than a set of spaces where authorized items are to be written in (presumably by the clinic). In Chapter 3, we saw that in April 1975, many clinics were offering unauthorized cereals to participants, and we are now in a position to understand how that was done. Because some clinics' vouchers merely specified "breakfast cereal," unauthorized brands were not precluded; other vouchers' blank spaces allowed either clinic staff or participants or retailers to fill in whatever brand was purchased; and still other clinics printed the brand names of unauthorized cereals on their vouchers along with authorized brands.

(3) Pictures and foreign languages. From the recipient's point of view, understanding which foods are permitted and which are not can sometimes be a difficult matter. This is indicated, among other ways, by the fact to be discussed later in this section that fully 25 percent of retailer complaints about the WIC program concerned participant comprehension of rules or participant attitudes. Printing vouchers in foreign languages (which occurs in 6 percent of clinics), when substantial numbers of recipients would be assisted by it, may help to alleviate confusion. Pictures of authorized foods (such as are present on vouchers used in 8 percent of reporting clinics) might reduce confusion among both foreign-language recipients and recipients who have reading difficulties. Color

---

[3]The degree of sophistication of the voucher form may have some bearing on the way retailers and participants view the WIC program. One administrator stated that retailers in his area would be less prone to substitute unauthorized foods if confronted with a more official-looking voucher.

[4]Seventeen percent of program area offices and 30 percent of state offices also reported using computer data processing for some aspect of WIC administration other than voucher processing.

coding (which is used in 39 percent of clinics) may also reduce confusion, particularly when the number of vouchers handled by recipients is large.

(4) Separate vouchers for each food and separate vouchers for each recipient. About 90 percent of clinic voucher systems distribute a separate voucher for each WIC recipient in a household, and about 25 percent distribute separate vouchers for each type of food each recipient is to receive. Thus some recipients may be handling one piece of paper per delivery period while others may be dealing with as many as 25 or 30. Recipients in systems using vouchers were asked what number of vouchers would be most satisfactory to them, with the following responses:

Preference	Percent of participant households currently receiving this number of separate vouchers per month		
	5 or fewer	6 to 19	20 or more
Respondent wants fewer separate vouchers	1%	5%	11%
Current number is about right	88	80	75
Respondent wants more separate vouchers	11	15	14
Total	100%	100%	100%

(based on 2,650 participant households)

According to these responses, the majority of participants are satisfied with their current number of vouchers. Between 75 and 88 percent of respondents felt that their current number of vouchers was "about right," even though that current number varied from fewer than five to more than 20. There is, however, a slight but consistent tendency toward desiring fewer vouchers when the number is large; the proportion advocating fewer vouchers rises from 1 percent among those handling five or fewer per month to 11 percent for those handling 20 or more.[5] These results perhaps suggest that systems utilizing separate vouchers for each WIC individual

[5]This difference is statistically significant at the .05 level of confidence, using a Chi square test.

raise no practical difficulties but that systems which use separate vouchers for each food for each individual may pose difficulties for some participants.

(5) Specification of allowable prices or quantities. In 65 percent of the WIC clinics using vouchers, the voucher stipulates either the total allowable value of permissible purchases or the allowable price of individual food items. If clinic information about prices is not current, or if prices fluctuate from store to store, or if amounts are stated in round numbers, then the price of purchased items may not exactly match the allowable face value of the voucher. The voucher may be worth more than the food purchase, or it may be worth less.[6]

The following two tables indicate how frequently price mismatches arise and what adjustments are made when they do occur:

If amount on voucher is less than selling price	Percent of clinics
Recipient pays the difference	56%
Other	20
Has never happened	24
Total	100%

[6]Thirty-eight percent of clinics using retailers said they do not attempt to keep track of retail prices, while 62 percent of the clinics indicated that they do, in the following manner:

Method	Percent of clinics
Surveys, weekly or biweekly	16%
Surveys, monthly or less frequently	46
Retailer notifies them of price changes	23
More than one of these methods	15
Total	100%

(based on 65 clinics)

In some cases, the "survey" consisted of the clinic administrator noting item prices while doing his own grocery shopping.

If amount on voucher exceeds current selling price	Percent of clinics
Merchant keeps the difference	14%
Recipient gets the difference in the form of additional food	9
Other	27
Has never happened	50
Total	100%

(based on 44 clinics using vouchers with either item price or total value recorded on the voucher)

Because of the numerous sources of potential difference between purchase prices and voucher allowable values, it is not surprising that in 76 percent of clinics in which vouchers stipulate values, the allowable voucher amount was less than the selling price of WIC purchase at least once, and in 50 percent of clinics the voucher value exceeded the selling price at least once. We do not know by how much the amounts differed.

From the above tables, it appears that if the voucher does not cover the full price of the purchase, the recipient typically makes up the difference. If the voucher provides an amount in excess of the cost of food, in some cases the recipient receives the difference, in some cases the merchant does, and in some cases (part of the "other" category), the clinic is not charged the full face value. The net effect seems to be one which allows merchants sometimes to keep extra money if face values are too high but never to force selling prices down if face values are too low.[7] To the extent this is true, the practice of putting prices on vouchers seems to work to the disadvantage of the WIC program.

(6) Stockouts. There always exists a possibility that a consumer may find a specific item out of stock when shopping at a given store. Because the set of WIC foods is tightly specified and substitutions are not permitted, the probability and implications of these "stockouts" are

[7]One possible exception, concerning which we have no data, is that relatively low face values may force recipients to shop at different stores, in search of prices within the limits.

more problematic for WIC participants than for the consuming public at large. About 20 percent of the program administrators surveyed felt that some of their participants encountered this problem, at least occasionally.[8]

Number of times participants experienced stockouts	Percent of clinics using vouchers
Several times a month or week	14%
Once a month or less often	6
Never, rarely	80
Total	100%

(based on 72 clinics using vouchers)

The following tables indicate what compensatory actions occur when stockouts are encountered in retail stores, as reported by clinic administrators.

Consequences of stockouts	Percent of clinics using vouchers
Recipient can come back another day or get a raincheck	84%
Recipient can settle for what is available	81
Recipient can go to another outlet or can return to clinic for voucher on available items	62
Recipient can substitute other food items	17
Other	3

(based on 69 clinics)

[8]At the same time, 100 percent of administrators in dairy delivery systems reported that the situation never arose in those systems, and approximately 13 percent of WIC recipients in direct distribution systems stated that they felt that they did not get all the food to which they were entitled, due to stock shortages.

In 84 percent of voucher-using clinics, the issuance of rainchecks allowed recipients to pick up authorized amounts at a later time at the same store initially visited. In 17 percent of the reporting clinics, the store offered substitute food items; it is not known what these substitute items were.

Food vendors' reports of the frequency and consequences of stockouts, presented in the following table, broadly agree with clinic administrators' profile of the situation.

Retailers' policies on stockouts	Percent of retailers
Never have been out of an item	70%
Do not issue rainchecks	6
Issue rainchecks, but few are redeemed	3
Issue rainchecks, many of which have been redeemed	18
Substitute brands rather than issue rainchecks	3
Total	100%

(based on 71 retailers)

Seventy percent of retailers say that stockouts have never occurred, about 6 percent indicate that they do not issue rainchecks, and about 3 percent indicate that they substitute food items.

The circumstances of temporary stockouts is one context in which the use of rainchecks occurs. Rainchecks are also utilized by some retailers as a convenience to participants. A full allotment of food may be too cumbersome for a participant to carry in one trip, and perishable items such as fluid milk may not stay fresh long enough to be picked up only once per issuance period. Participants therefore prefer to use their voucher for part of an allotment and receive a raincheck for the remainder.

Recipients in distribution systems using vouchers were asked if they had any trouble using their vouchers with food vendors. Ten percent of those in retail purchase systems and 6 percent of persons in dairy home delivery systems indicated that they did. These recipients then were asked which of the following types of problems (or circumstances they

might have felt were problems) they had encountered, with the following results:

Problems using a voucher in making food purchase	Percent of participants with problem(s) who encountered each problem(s)
Store refused to accept vouchers; store confused	28%
Store would not allow a proxy person to buy foods	19
Embarrassed; store personnel not nice to WIC recipients	17
Store only allowed exact size specified on voucher	15
Store did not have desired brand	15
Store often out of WIC foods; multiple trips required	13
Store makes recipient separate WIC foods from other foods	10
Store does not like WIC	9
Encounters difficulties or inconvenience at checkout lines (e.g., I.D. card required, cannot use express lanes)	5
Store charged maximum amount, even though food costs less	5
Food cost more than was allowed on voucher	5
Store does not give rainchecks	3
Store charged for foods recipient did not receive	3
Store refused to give half-dozen eggs	2
Vouchers lost or stolen	2
Other	20

(based on 254 participants reporting that they encountered some problem)

In addition, about 2 percent of partcipants in all distribution systems indicated that they did not trust the person distributing food to them to give them all the foods to which they are entitled. The proportion of participants expressing this distrust ranged from 1 percent of those in

direct distribution and retail purchase systems to 3 percent of those in home delivery systems.[9]

The Question of a Uniform Voucher

Reactions were gathered from program area and state administrators to the idea of a nationally-uniform voucher. Their opinions are presented in the following table.

Providing a uniform voucher would be a:	Percent of administrators
Major advantage	30%
Minor advantage	14
Not important	28
Minor disadvantage	8
Major disadvantage	20
Total	100%

(based on 71 state and program area administrators)

Forty percent felt it would be advantageous, while 28 percent felt that it would be a disadvantage. Most administrators opposed to the notion were either those already using a sophisticated, carefully-developed voucher designed at the state or local level or those who were participating in distribution systems not using vouchers (direct distribution or voucherless dairy delivery).

It is interesting to note that even in systems with so-called uniform vouchers designed at the state or program area level, vouchers are not necessarily handled identically at all clinics. In the survey, we observed the following examples of local adjustments made on "uniform" vouchers:

- One state-designed voucher system utilizes a computer card with no place for a signature of an authorizing official. Nevertheless,

[9]The figure for home delivery is statistically significantly different from the figures for the other two distribution systems at the .01 level; the direct distribution and retail purchase systems are not significantly different from each other.

some clinics have their staff sign the card. On the other hand, in another system using a project-designed voucher with a space for a signature, some clinics sign the card while others ignore the signature space.

- In one state-designed voucher with spaces for prices of individual items, some clinics entered the prices and others did not.
- In project-designed vouchers with spaces allotted for the following types of information, only some clinics entered it: expiration dates, retailers where vouchers were redeemable, kinds of recipients, and serial numbers.

This variation suggests that uniform vouchers by themselves do not necessarily impose uniformity of procedures.

RELATIONSHIPS WITH FOOD VENDORS

Selection of Vendors

The following table indicates the type of supplier for which participants in the survey usually receive their WIC foods:

Where participants usually obtain their WIC foods	Percent of participant households
Supermarket (chain or independent)	64%
Dairy home delivery	22
Neighborhood grocery or convenience store	11
Pick it up at clinic	8
Home delivery by WIC program	6
Pick it up at store or center run by WIC	2
Other	1
Drug store	*

*Less than 0.5 percent

(based on 3,597 participant households; more than one response was allowed per household)

The following table indicates the reasons participants give for choosing these vendors (in cases other than direct distribution at the clinic, where no choice was available):

Reason participant receives food from that vendor	Percent of participant households
Always shop there	59%
Only one allowed by WIC	25
Suggested by WIC	14
Usually has WIC foods, other stores don't	4
Regular store doesn't take WIC vouchers	3
Other	5

(based on 3,364 participant households)

Among the 71 food vendors interviewed in the survey (including both retailers and home delivery dairies), 77 percent supply the full range of WIC foods, while the remaining 23 percent offer only some of them (e.g., only milk). Twenty-six percent of clients in retail purchase systems allow participation by any retailer expressing the desire to do so. The remaining 74 percent require some degree of approval prior to retailer participation, although the data do not indicate what approval entails; in some cases, it may mean nothing more than informing the retailer about reimbursement procedures.

The next table indicates how the retailer identifies those persons eligible to participate in the WIC program:

How retailers identify WIC recipients	Percent of retailers
Vouchers presented by recipients	75%
List supplied by clinic	19
Vouchers and list	6
Total	100%

(based on 69 retailers)

Vendor Reimbursement

The survey showed an almost even split concerning what office reimburses food vendors: 49 percent of the clinics surveyed reported that

reimbursement was handled at the state level, while for the remaining 51 percent of the cases, the program area or clinic itself reimbursed providers. In those clinics where money was passed from state to program levels for reimbursement of vendors by the latter, one-third reported receiving advance funding from the state office, with the remainder being reimbursed after they made payment to food vendors.[10]

One common variant in reimbursement procedures is to employ the services of a bank rather than for WIC programs to perform reimbursement themselves. This procedure was followed by 38 percent of clinics surveyed. A common way to do so is to make the voucher a negotiable instrument which food vendors deposit as a check. Of those clinics using banks for reimbursement, 47 percent used the banks for the reimbursement process only, while the remaining 53 percent used them for additional accounting or management services. Banks made no explicit charge for services at 45 percent of clinics using banks. At clinics where the banks do impose a charge, the average charge was 4.6 cents per voucher processed, with the amount ranging from .2 cents per voucher to 11 cents per voucher.

The following table presents retailers' estimates of the waiting period they experience in receiving reimbursements for their WIC sales:[11]

[10]In 44 percent of clinics' administrative systems, the WIC office itself actually handled reimbursement, while in 19 percent the work was performed by a government office separate from the WIC program (for example, the city treasurer's office). In the remaining 38 percent (which are discussed in the next paragraph), banks actually handled reimbursement.

[11]Retailers are not usually reimbursed in the case of lost vouchers, as the following table shows:

Retailer reimbursement for lost voucher	Percent of retailers
Situation never has arisen	58%
Cannot get reimbursed	36
Can get reimbursed	6
Total	100%

(based on 64 retailers)

Retailer waiting period for reimbursement	Percent of retailers
Prepaid	15%
One week or less	24
Longer than one week but one month or less	37
Longer than one month	24
Total	100%

(based on 54 retailers)

While most reimbursement occurs within a month (or is prepaid), about one quarter of retailers reported having to wait longer than a month. One hundred percent of the retailers who were prepaid or who were reimbursed within one month described themselves as "very satisfied" or "somewhat satisfied" with the payment procedures; 85 percent of retailers for whom reimbursement took longer than one month described themselves as dissatisfied with the reimbursement aspect of WIC operations.

When retail stores and home delivery dairies were asked about the kinds of problems they felt to be generated by WIC, they reported the following:

Retailer problems with WIC	Percent of mentions of problems
Recipient relations (attitude or understanding)	25%
Paperwork required	21
Physical operations (item stocking, store lines, delivery routes)	17
Mismatch between prices on voucher and prices in store	14
Vouchers improperly prepared	7
Slow payment	7
Unit size mismatch	4
Other	5
Total	100%

(based on 111 mentions by 70 retailers)

The types of retailers' complaints reported by program administrators are shown in the next table:

Type of complaints	Percent of clinics in which retailers made each complaint	Percent of clinics receiving each complaint in which over 1/3 of retailers made the complaint
Fairness of instructions	48%	18%
Clarity of instructions	31	33
Waiting time for reimbursement	30	14
Amount of paperwork	26	0

(based on 69 clinics)

All program area offices in the sample involved in direct distribution systems reported reimbursing wholesalers for food purchases. Of these 10 program area offices, one program area reported that a small number (less than one-third) of participating wholesalers complained about waiting time for reimbursement, and one program area reported that a small number (less than one-third) complained about the fairness of WIC dealings. No complaints were reported about paperwork, clarity of instructions, or any other aspect of wholesaler reimbursement.[12]

Control of Food Package

There are many possible reasons why participants might not receive the intended types and amounts of WIC foods: lack of understanding by participants or retailers, unauthorized food substitutions, or stock shortages for which substitutions are made. Some of these instances involve deliberate rule violations, others stem from a misunderstanding about rules, and still others result from an effort to compensate for rule inflexibility (e.g., emergency substitutions for stockouts). The survey data do not permit us to distinguish clearly among these various

[12]Wholesalers were not asked these questions directly; rather, these figures are program administrators' reports of wholesalers' feelings.

cases, but they do indicate that program control of participants' food packages was less than absolute.

Fifty-one percent of the surveyed clinics reported that they had dropped at least one participant from the program because of rule violations, although it is not known of what the infractions consisted. As the following table shows, 5 percent of the program area administrators considered cheating among participants to be a frequent occurrence, while a majority said it occurs occasionally. About 2 percent of program area administrators felt that retailers or delivery people cheated frequently, and a little over one-third felt they did so occasionally.

Extent of problem	Percent of program area administrators	
	Cheating by recipients	Cheating by retailers or delivery people
Very frequently or frequently	5%	2%
Occasionally or not very frequently	56	36
Almost never	39	62
Total	100%	100%

(based on 58 program areas)

When retailers were directly asked whether they made food substitutions for participants, 8 percent of the 52 retailers who responded to this question openly stated that they did.[13] When participants were asked what they liked or disliked about the retail clerk or their delivery person, 3 percent indicated that they liked him because he made substitutions. Because these responses are directly admitting violations of program rules to an interviewer associated with the program, these figures should probably be considered minimum estimates. It is possible that some of the substitutions were of minor importance, such as packages of different size.

[13]The substitutions reported by these stores were: juice brands or types (two retailers), cereal brands or types (two retailers), chocolate milk for regular milk (one retailer), and strained infant food for some unstated WIC food (one retailer).

One key way to control the food package is by choice of the system of food distribution. Direct distribution seems to offer participants the least opportunity for substitution, while home delivery and retail purchase seem to allow more. The following table displays, according to distribution system, the frequency of participants' statements that what they dislike about their retail clerk or delivery person is that he refuses to make substitution.

Food distribution system	Percent of participants implying delivery person refused to make substitutions
Direct distribution	25%
Home delivery	12
Retail purchase	13
All distribution systems	13

(based on 469 participant households)

Here, participants in direct delivery systems indicated frustration at being refused substitutions about twice as often as participants in either retail purchase or home delivery systems.[14] Apparently, WIC staff members can exercise more control over participant foods when handing out food themselves than when participants and home delivery drivers encounter each other at the participants' homes or when alternative brands are standing on the same store shelf as authorized brands.

The possibility that failure to make requested substitutions might lead customers to take both their WIC business and regular grocery shopping to more cooperative stores places retailers under pressure to allow substitutions. Seventy-seven percent of WIC recipients participating in retail purchase systems indicated that they usually purchase their regular groceries at the same store that they purchase their WIC foods. Food vendors in the survey estimated that an average of 32 percent of their total sales of WIC-type foods are due to the WIC program. As the

[14]The difference between the direct distribution system and the other two systems is statistically significant at the .01 level; the difference between the other two systems is not statistically significant.

following table indicates, WIC sales sometimes are a substantial proportion of sales growth and customer growth for a retailer.[15]

Percent business growth due to WIC	Percent of food vendors' Sales growth	Customer growth
No growth	65%	39%
1 to 9 percent	25	38
10 to 24 percent	6	13
25 to 50 percent	4	10
Total	100%	100%

(based on 71 food vendors)

By controlling such a large amount of potential sales, WIC clinics are in a position to exert pressure on retailers to conform to regulations. One program administrator described to the survey interviewer a control system based on this philosophy. Retailers were warned they were subject to periodic investigations by persons posing as WIC participants and that if violations were uncovered, the store would be dropped from the WIC approved list.

OPERATIONS IN HOME DELIVERY AND DIRECT DISTRIBUTION SYSTEMS

Home Delivery

For 92 percent of WIC recipients receiving food by home delivery, all arrangements for delivery were made by the WIC clinic; for 8 percent of recipients, the recipient herself was involved in making the arrangements. Nine percent of home delivery recipients indicated that they had some choice in the days of the week they received deliveries.

The following table shows the frequency of deliveries in home delivery systems:

---

[15] As is discussed in the appendix to this report, the retailer sample over-represents stores or dairies doing large WIC volume; therefore, the estimates may be higher than for the average WIC food vendor.

Frequency of home delivery	Percent of participant households
At least weekly	62%
At least monthly but less frequently than once per week	25
Less frequently than once a month	11
Other	2
Total	100%

(based on 894 participant households)

The next table presents participants' preferences for increases or decreases in the frequency of delivery, in relation to their current frequency:

Current frequency of home delivery	Percent of participants preferring: More frequent deliveries	Same frequency as now	Less frequent deliveries	Total
At least weekly	14%	84%	2%	100%
At least monthly but less frequently than once per week	17	82	*	100
Less frequently than once a month	8	91	1	100

(based on 894 participant households)
*Less than 0.5 percent

These data indicate that over 80 percent of recipients are satisfied with the current frequency of deliveries, whether that frequency is several times a week or less than once a month; no clear relationship appears between current frequency and preference for change.

The next table profiles what occurs if no one is at home at the time of delivery.

Disposition of food when recipient is not at home at time of delivery	Percent of participant households
Food is left anyway (at that home or with someone else)	80%
Food is brought back later or another day	14
Recipient does not get the food	5
Food can be picked up later	1
Total	100%

(based on 651 participant households)

Direct Distribution

Earlier in this chapter we presented two tables showing the hours and days clinics are open for distribution of food or vouchers and whether appointments are necessary. The following table conveys the opinions of participants in direct distribution systems about the convenience of the hours at which they can pick up foods at their WIC clinics.

Convenience of times for food pickup	Percent of participants
Pretty convenient	81%
Other times are better	11
There are no easy times	8
Total	100%

(based on 371 participant households)

A little fewer than 20 percent did not find the hours convenient; for those participants who felt that other times would be more convenient, the following table shows what times they would prefer.

More convenient times for food pickup	Percent of participants
During working hours	49%
Evenings	29
Before 9 a.m.	12
Other	10
Total	100%

(based on 41 participant households)

Seven percent of participants in direct distribution systems reported that they were able to choose how often they pick up their foods at the clinic, while 93 percent of participants in these systems said that they were not. The following table shows participants' preferences for the frequency of direct distribution food pickup, as a function of their current frequency of pickup:

	Percent of participants preferring:			
Current frequency of food distribution	More frequent pickups	Same frequency as now	Less frequent pickups	Total
More than once a month	14%	75%	11%	100%
Once a month	27	67	6	100
Less frequently than once a month	21	72	7	100

(based on 331 participant households)

The table indicates that between two-thirds and three-quarters of participants prefer their current frequency of delivery, regardless of whether that frequency is less than once a month or more than once a month. There also appears to be some preference for more frequent deliveries. Among those participants preferring some change, the number seeking an increase always exceeds that seeking a decrease; this slight preference for more deliveries is larger for those participants picking up food once a month or less frequently than for those picking it up several times a month.

RECIPIENTS' SATISFACTION AND BURDENS ON RECIPIENTS

That participants should be contented with the way a program works is not only desirable as an end in itself; it may also promote program effectiveness by encouraging participation and by promoting cooperative attitudes. Satisfaction, in turn, may be based in part on intangible aspects of program operations such as trust and in part on concrete aspects such as the time and cost which participation requires.

Overall Recipient Satisfaction

The most direct probe of general recipient satisfaction with WIC food distribution systems was the survey question, "Are you satisfied with the way you get your WIC foods?" About 96 percent of all WIC participant households indicated overall satisfaction. And this level of overall satisfaction held true for all three major food distribution systems. As the following table shows, the proportions of recipients reporting that they were satisfied differed among the three systems by less than two percentage points, and none of the differences is statistically significant at even the .10 level.

Distribution system	Percent recipients satisfied
All distribution systems	95.5%
Direct distribution	94.8
Home delivery	95.2
Retail purchase	96.3

(based on 3,334 recipient households)

WIC recipients who said that they were not satisfied with the manner in which they were getting their WIC foods were asked what distribution system they would prefer. Fifty-three of the 150 dissatisfied recipients suggested a method of food distribution that coincided with one of the three main distribution systems under study in this section. Of these, 45 percent favored switching to retail purchase, 38 percent favored changing to home delivery, and 17 percent favored changing to direct distribution.

Thus, both the responses to the satisfaction question and the suggestions for which system would be preferred place the three distribution systems in the same rank order of popularity among participants: Retail purchase is slightly more popular than home delivery, which is slightly more popular than direct distribution. It must be kept in mind, however, that the differences among the three are very small.

Characteristics of Dissatisfied Participants

Though there is no strong relationship between distribution system and participant satisfaction, there are other specific factors which are closely associated with satisfaction. Exhibit 6.2 compares those 4 percent of participants who declared themselves dissatisfied with the way that they are receiving their WIC foods with the 96 percent who reported being satisfied. The two groups differed from each other in several demographic characteristics:

- The average level of education of the WIC participants who expressed dissatisfaction is 0.3 years higher than the average level of education of the WIC participants who declared themselves satisfied.
- The WIC participants who are dissatisfied tend to live in larger cities than those who are satisfied.
- Among ethnic groups, the highest rate of dissatisfaction was exhibited by blacks (5.3 percent) and the lowest is exhibited by American Indians (1.4 percent).
- The annual income of WIC recipients who were dissatisfied averaged $4,261, which is 82 percent of the mean income of the satisfied.

Furthermore, several aspects of clinic operation were more difficult for those dissatisfied than for those satisfied:

- The cost required for transportation to the clinic is greater for those dissatisfied than for those satisfied. The average one-way cost of $.58 for the dissatisfied is about one third higher than the $.42 average cost for the satisfied; the proportion of persons paying more than $2 for one-way transportation is 7 percent for the dissatisfied and 2 percent for the satisfied.
- The time required to get to the clinic is greater for those who were dissatisfied than for those who were satisfied. The average travel time of 19 minutes among the dissatisfied is about

Exhibit 6.2

Selected Characteristics of WIC Participants Who Were Satisfied with the Way They Receive Their WIC Food Compared to Participants Who Were Dissatisfied

Characteristic	Dissatisfied	Satisfied
Education of head of household	10.6 years	10.3 years
City size (average population)	274,900	154,500
Ethnic group		
American Indian	1.4%	98.6%
Black	5.3%	94.7%
Spanish-American	2.3%	97.7%
White	3.6%	96.4%
Income		
Overall average	$4,261	$5,172
American Indian	3,000	6,186
Black	3,714	4,449
Spanish-American	4,571	4,717
White	5,000	6,141
Transportation cost to clinic (one-way)		
Average cost	$.58	$.42
Percent of respondents whose cost is zero	40%	45%
Percent of respondents whose cost is more than $2	7%	2%
Transportation time to clinic (one-way)		
Average time	19 minutes	16 minutes
Percent of recipients whose time is less than 15 minutes	50%	58%
Percent of recipients whose time is more than 60 minutes	4%	2%
Participant finds clinic hours inconvenient	18%	8%
Participant has to make special arrangements to get to clinic (e.g., child care or transportation)	42%	29%
Recipient is dissatisfied with delivery people for not making accommodations (such as rainchecks)	17%	9%

All differences displayed between satisfied and dissatisfied recipients are statistically significant at the .10 level or higher.

20 percent higher than the 16 minutes average travel time among the satisfied.

- A large proportion of dissatisfied recipients (42 percent) mentioned having to make special arrangements to go the clinic than was true of satisfied recipients (29 percent).

- A larger proportion of dissatisfied recipients (17 percent, versus 9 percent among satisfied recipients) was displeased with delivery people or store clerks because they refused to make special arrangements (such as rainchecks).

Several of these findings are consistent with findings reported in Chapter 2. There, Exhibit 2.5 indicates that among voluntary nonparticipants, lower-income persons were often prevented from participating in WIC by concrete difficulties such as inconvenience of clinic hours and the magnitude of transportation costs. These same barriers to participation appear here, in Exhibit 6.2, as complaints voiced by recipients who expressed dissatisfaction with the way they receive their WIC foods. And dissatisfaction is again associated with participants of lower incomes, just as these difficulties in participation were associated with the lowest income persons declining to participate.

The remainder of this section examines in more detail some of the burdens placed on WIC recipients in the course of their participation. These include costs and problems associated with getting to and from the clinic, waiting time for voucher or food pickup, and treatment by delivery people and retail stores.

Burdens Associated with Getting to the Clinic

The following table presents participants' reports of how frequently they must visit the WIC clinic in order to stay on the program:

Frequency of visit	Percent of participant households
More than once per month	7%
Once per month	56
Every two to three months	22
Every four to six months	10
Every six to twelve months	2
Never	3
Total	100%

(based on 3,325 participant households)

The most common visit frequency--experienced by over half of all recipient households--is once per month.

Exhibit 6.3 displays the extent to which WIC participants indicated that they had to make special arrangements in order to get to their WIC clinic. Overall, 31 percent of recipients had to make at least one type of arrangement. The need to make child care arrangements was mentioned by 19 percent of recipients, while work, transportation, or school arrangements were mentioned by between 3 and 6 percent of participants. For persons who had to make special arrangements at work, 93 percent missed some work time; the amount of time missed averaged 3.1 hours among those who missed any. For persons who had to make special arrangements at school, 96 percent missed some school time, and the amount of time missed averaged 4.3 hours among those who missed any. For those who had to arrange for child care, the average cost incurred for child care per clinic visit was one dollar; this figure includes those who had to arrange child care but paid nothing.

With the exception of school arrangements, WIC recipients in the direct distribution system experience by far the greatest need to make special arrangements. Fifty-four percent of these recipients must make at least one type of special arrangement, compared with 30 percent of those in the retail distribution system and 26 percent of recipients with home delivery. A plausible explanation of the greater need to arrange child care and transportation in direct distribution systems is that the woman carrying groceries home from a clinic visit is more likely

Exhibit 6.3

Extent to Which Recipients Must Make Special Arrangements in Order to Go to WIC Clinic

Types of arrangement	Distribution system			
	Total	Direct distribution	Home delivery	Retail purchase
At least one type of arrangement[1,2]	31.1%	54.1%	26.4%	30.1%
Child care	19.6	39.1	15.1	18.9
Work	5.5	9.5	5.5	5.1
Transportation	5.5	10.6	3.6	5.6
School	3.5	1.4	4.4	3.4

[1]This does not equal the sum of the specific type of arrangements, because a household may make more than one type of arrangement.

[2]Differences among distribution systems are all statistically significant at the .05 level.

to want to leave children at home during a clinic visit and is more likely to require convenient transportation (such as a car). One month's allotment of WIC foods for one recipient weighs between 30 and 90 pounds, depending on the form (fresh or dry) in which milk, eggs, and formula are received.

Statistical analysis was used to determine if there is a relationship between certain clinic characteristics or policies and the percent of a clinic's caseload that had to make special arrangements to go to the clinic.[16] The analysis showed that a direct distribution system raises by 35 percentage points the proportion of clinic participants who have to make special arrangements, while opening clinics evenings and weekends lowers the proportion of participants having to make special arrangements by 36 percentage points.

Exhibit 6.4 presents the estimated transportation cost that recipients incur within each distribution system. In the case of retail purchase systems, estimated costs are reported separately for recipients who usually purchase their WIC foods in the same trip as their visit to the clinic and for recipients who usually get their WIC foods in a different trip.[17] This exhibit also shows the estimated trip costs for each mode of travel used by recipients in various distribution systems to get to the clinic. For all distribution systems together, the one-way transportation costs of getting to the clinic averaged $.43, and the average WIC recipient made 0.8 trips per month to the clinic. Therefore, the round-trip transportation cost per month for WIC recipients averaged $.72.

The average cost of a one-way trip to the clinic is higher for recipients in the direct distribution system ($.56) than for recipients in the home delivery system ($.35) and retail distribution system ($.37 or $.48). This reflected the mode of transportation used by those in

---

[16]See Technical Note 1 for the regression equations supporting the results given in this paragraph.

[17]Of 2,567 participant households involved in retail purchase systems, 35 percent reported that they usually purchased their WIC foods on the same trip as their clinic visit to pick up vouchers, 27 percent reported that they sometimes do so, and 38 percent reported that they usually do not.

Exhibit 6.4

Participants' Out-of-Pocket Costs and Mode of Travel to WIC Clinics

Distribution system	Total round trip transportation costs per month	Average number of trips per month made to clinic	One-way transportation costs per trip to the clinic	Usual mode of travel (percent of participant households)					
				Walk	Transportation provided by clinic	Bus	Own car or friend's car	Taxicab	Total
Overall average	$.72	.82	$.43	27%	1%	12%	56%	4%	100%
Direct distribution	.78	.74	.56	25	2	13	51	9	100
Retail purchase									
Shop & visit clinic on same trip	.82	.87	.48	19	2	9	68	2	100
Shop & visit clinic on different trip	.60	.87	.37	28	1	14	54	3	100
Home delivery	.46	.74	.35	41	2	18	35	4	100
Average cost per one-way trip via this mode	-	-	-	$.00	$.17	$.45	$.54	$1.57	-

Based on 3,245 participant households.

direct distribution systems. For example, while over 40 percent of the home delivery recipients walked to the clinic, only 25 percent of direct distribution recipients did so. Also 9 percent of those in direct distribution took a taxicab, compared to 2 to 4 percent in the other distribution systems. This is probably due to the necessity of having to carry grocery packages home from the direct distribution clinics.

Another factor relevant to program convenience to recipients is the amount of time it takes to pick up their food or vouchers. This varies considerably among WIC clinics. The table below presents clinic administrators' estimates of the minimum waiting time which recipients encounter when picking up vouchers or food at their clinics.

Minimum waiting time	Percent of clinics
None or less than five minutes	13%
Six to twenty minutes	44
Twenty minutes to one hour	32
More than one hour	11
Total	100%

(based on 82 clinics)

Fifty-seven percent of clinics report that the minimum wait is 20 minutes or less, while 11 percent report that the minimum wait is more than an hour.

The following table presents participants' reports of the times of the day during which they can pick up foods or vouchers at WIC clinics.

Times for food/voucher pickups	Percent of participants
Specific days or times; appointment needed	40%
Specific days or times; no appointment needed	33
Anytime; appointment needed	14
Anytime; no appointment needed	13
Total	100%

(based on 3,054 participant households)

About 75 percent of participants reported being allowed to pick up their vouchers or food only on specific days or times of the day, and a little over half reported being required to make appointments in advance.

Administrators reported the following regarding hours their clinics are open for enrollment and food voucher or food pickup:

Clinic open hours	Percent of clinics	
	For enrollment	For picking up food or vouchers
Some or all weekdays plus evenings and weekends	1%	1%
Some or all weekdays plus evenings	12	10
Some or all weekdays plus weekends	3	0
All weekdays	44	45
Some weekdays	21	23
Five days a month or fewer	19	21
Total	100%	100%

(based on 94 clinics)

About 85 percent of the clinics are open only during weekdays, with half of these open less than five days a week. Fifteen percent of clinics offer some evening or weekend hours.

In reaction to these hours, about 92 percent of participant households were satisfied with the availability of hours, while 8 percent labeled them inconvenient:

Are clinic hours convenient?	Percent of participant households
Clinic hours are convenient	83%
Clinic hours are not too bad	9
Clinic hours are inconvenient	8
Total	100%

(based on 3,557 participant households)

CONCLUSIONS

In this analysis of WIC operations, we have seen that:

(1) WIC participants overall stated that they were satisfied with the way they received their WIC foods; 96 percent of participants reported themselves so. This level of satisfaction extended to all three distribution systems, although a very slight difference in participant satisfaction ranked retail purchase first in satisfaction, home delivery second, and direct distribution third.

(2) Dissatisfied participants tended to experience higher costs and levels of inconvenience in participating in WIC than did satisfied participants, and the inconvenient aspects--such as transportation cost and child care difficulties--were the same difficulties discussed in Chapter 2 as being barriers to participation, particularly for lowest income potential participants.

(3) The direct distribution system imposed the highest burdens on participants (in terms of out-of-pocket costs and the necessity to make special arrangements), while the home delivery system imposed the least burdens. Retail purchase systems impose an intermediate level of burdens.

(4) Control of unauthorized substitutions in the food package was apparently a small but persistent problem. Direct distribution systems can control the foods received most tightly among the three systems. Home delivery and retail purchase systems have less inherent control, although possibilities may exist if administrators choose to exercise them.

(5) The design of vouchers varied widely from clinic to clinic, with some consequent effects on program operations.

(6) The degree to which authority was divided between the state level of administration and the program area level varied widely, but no general differences of operational outcomes attributable to the various ranges were readily apparent.

TECHNICAL NOTES

1. In this regression, the dependent variable was the percent of a clinic's participant sample which had to make at least one special arrangement to go to the clinic. The independent variables and estimated regression coefficients were as follows:

Independent variable	Regression coefficient	t-statistic
Clinic is open some weekdays each week[1]	-7.6	1.0
Clinic is open all weekdays each week[1]	-10.5	1.5
Clinic is open all weekdays plus some evenings[1]	1.4	.1
Clinic is open all weekdays plus some evenings and weekends[1]	-35.7	2.0
Clinic is open 5 days a month or fewer[1]	-5.7	.7
Clinic uses home delivery	2.0	.3
Clinic uses retail purchase	11.5	1.5
Clinic uses direct distribution	34.9	3.8
Clinic is sponsored by hospital[2]	6.2	1.0
Clinic is sponsored by private, nonprofit[2]	-2.7	.7
Clinic is located in a rural area[3]	7.7	1.0
Clinic is located in a small city[3]	-5.4	1.3
Clinic is located in a medium-sized city[3]	-5.7	1.2
Number of months since clinic began operations	2.1	1.8
Intercept	4.1	---

R^2 = .38 F = 2.72

(based on 75 clinics)

[1]Omitted category: recipient does not come in to clinic to pick up vouchers.

[2]Omitted category: clinic is sponsored by city or county health department.

[3]Omitted category: clinic is located in a large city.

APPENDIX

HOW SURVEY DATA WERE GATHERED AND USED

The primary source of data for the analysis presented in this report was a survey of WIC programs and participants conducted in April 1975. This appendix briefly describes how that survey was designed and conducted and how it fits into the overall study. It discusses those aspects of methodology necessary to evaluate the validity and reliability of the data gathered. The overall objectives of the study are discussed in the first section of this appendix, sample design is discussed in the second, and survey procedures are discussed in the third.

STUDY OBJECTIVES

When Congress established the WIC program as a pilot program in September of 1972, it mandated that the program be evaluated for its benefits and its effectiveness. One aspect of that evaluation has been a detailed medical study of WIC's impact on nutrition and health, performed under contract to the USDA by the School of Public Health at the University of North Carolina. The present report presents the results of a second, unrelated evaluation. This is the study described in a preliminary report to Congress as examining "the efficiency, effectiveness, and operational costs of the various state and local food delivery systems."[1] Originally, USDA arranged for this study to be conducted by the Technical Analysis Division of the National Bureau of Standards, Department of Commerce (NBS), and NBS commenced work in September 1974. At approximately the same time, the Department of Commerce decided to dissolve the Technical Analysis Division, as of the end of that fiscal year. This led to planning in the early stages of the study to shift to The Urban Institute the primary responsibility for the later stages of the study and for preparation of this report. These contractors were monitored throughout their performance by the Nutrition and Technical Services Staff of the Food and Nutrition Service, United States Department of Agriculture.

As the quotation in the previous paragraph indicates, a major focus of interest in the current study is the effectiveness of alternative modes of physically distributing WIC foods. In the main body of this report,

---

[1]United States Department of Agriculture. Implementation and Status of the Special Supplemental Food Program for Women, Infants and Children. October 1, 1974, p. 15.

we have repeatedly contrasted three major alternatives (home delivery, retail purchase, and direct distribution) on a wide variety of dimensions, including cost, recipient satisfaction and convenience, administrative control, and compatibility with program objectives. At the same time, we have investigated a variety of other administrative issues in WIC implementation, including reactions to WIC foods, the nature and effectiveness of nutrition education, the design of vouchers, and the nature and effects of various administrative procedures and policies. These aspects of how a WIC system operates combine with the physical distribution methods to form an overall WIC delivery system. To profile the WIC delivery as of April 1975, and to comment where possible on the efficiency and effectiveness of alternative versions, has been the goal of this study.

Performing such an evaluation presented both a problem and an unusual opportunity. The opportunity arose from the wide variation which could be observed among the WIC operating programs across the country. Consistent with WIC's status as a pilot program, state and local WIC officials had been allowed considerable latitude in how they implemented the general concepts of the WIC program. A wide variety of administrative arrangements, and a large variation in policies and procedures, could therefore be compared. However, the variation in structure and procedures meant that complex questionnaires and extensive editing were necessary to render data comparable. Also, because WIC programs were all "piggy-backed" on existing health programs, much of the needed administrative data were embedded in records of the host program rather than recorded separately for WIC. The design was further complicated by a desire to survey both administrators and participants.

WHAT THE SAMPLE REPRESENTS

The sampling strategy developed by NBS to support these study objectives took the following form.

Clinic Sampling

First, it was decided that the basic sampling unit would be WIC program areas. There were 255 approved program areas in operation at the time sample decisions were being made, around November 1974. All 19 program areas participating in the University of North Carolina medical evaluation were excluded, as were all program areas with total caseloads of less than 75 and all programs that would not have been in operation for over a year when the survey was conducted. The remaining program areas were then divided into groups on the basis of three criteria: type of food distribution system, regional location, and authorized caseload. To represent alternative food distribution methods, all program areas' systems were placed into one of five classes: direct, voucher coupon, voucher check, grocery list, and home delivery.[2] For regional location,

[2]In the analysis in the main body of this report, these five are grouped into three systems: direct, retail purchase (covering voucher coupon, voucher check, and grocery list), and home delivery.

NBS used the five Food and Nutrition Service administrative regions then in existence. In terms of authorized caseload, NBS split the range into three groups: caseloads of less than 1,000, 1,001 to 4,000, and more than 4,000.

The basic sampling procedure was then randomly to select an equal number of program areas within each size/region/distribution system group. Exceptions to this procedure were allowed, however. First, because of their relative rarity, all available direct distribution systems and (with a few exceptions) all available home delivery systems were included.[3] Secondly, a number of ad hoc decisions were made to include what seemed to be "particularly interesting" examples of programs (e.g., several programs on Indian reservations, several programs which were participating in sophisticated state-level voucher systems, and several which were utilizing multiple distribution systems simultaneously). The net result was a set of 61 program areas which represented a wide variety of policies and operating circumstances, some of which were selected randomly within their strata and some of which were selected ad hoc. Sixty-one program areas represented 22 percent of the 241 program areas in operation at the time the sample was selected and 16 percent of the 345 programs in operation at the time the survey was conducted in April 1975.

Once a program area was selected and agreed to participate (none refused at this point), the next step was clinic sampling. For those program areas with only one clinic (including those for which the distinction between program area and clinic was not meaningful), the single clinic was included in the sample. For program areas with two or three clinics, one clinic was to be randomly selected; for four to seven clinics, two were to be randomly selected; for eight to 12 clinics, three were to be randomly selected; for 13 to 30 clinics, four were to be randomly selected; and for program areas with 31 or more clinics, five were to be randomly selected.

As in the selection of program areas, however, the principle of random selection was not universally followed at the clinic level. First, uniform definitions were not maintained as to what constituted a distinct clinic. Secondly, a number of substitutions were again made on ad hoc grounds, replacing a clinic which had been randomly selected with another clinic which NBS felt would be more interesting to study. For example, in one large city in the Northeast, the set of clinics drawn randomly turned out to serve primarily Spanish-speaking participants. Some of those clinics were then replaced with clinics which served primarily black clients. In another case, where the program area director indicated that he felt that a clinic selected randomly was "not representative" of his program area, he was allowed to substitute another clinic of his

---

[3] Of the 241 program areas operational in August 1974, 212 (or 88 percent) had chosen the retail purchase method, 10 (or 4 percent) had chosen direct distribution, and the remaining 19 (or 8 percent) had chosen home delivery.

own choosing. Finally, when the above procedures produced 108 total clinics, the number was reduced to 100 (which was the desired number); in some cases, the eight clinics dropped were those where interviewing would be most inconvenient or expensive, while in other cases, the ones dropped were those considered close duplicates of other clinics in the sample.

At each clinic where retail food vendors play a role in food distribution, one retailer interview was to be obtained. The retailers were dairies in home delivery systems and retail grocery stores or supermarkets in retail purchase systems. When more than one type of retailer was involved at a clinic, interviewers were instructed to select a dairy over a retail grocer or supermarket. If more than one retailer of a type was available, they were to select the retailer with the largest WIC sales.

To complete the gathering of data at all levels of the administrative hierarchy, interviews were also to be sought at the state-level WIC office for each state in which a program area was included in the sample. This set consisted of 30 states, and all 30 agreed to be interviewed.

Of the 100 clinics selected, 96 eventually were successfully interviewed. Of the four which dropped out of the sample, one withdrew because of a dispute with the surveying contractor over survey procedures, and three withdrew because the permission process to interview participants seemed too time consuming (for example, clearance was required from a patients' advisory council).

The sample which finally emerged, then, included 96 clinics selected through a complex, stratified, multistage, partially ad hoc procedure. Profiles of these clinics on such dimensions as locale, size, and food distribution system are given in Chapter I of the main body of this report, in the section titled "Some Clinic Characteristics." They include a wide variety of operating circumstances and policies. Therefore, the sample is particularly appropriate for comparing different ways of operating the WIC program. Caution should be exercised, however, in assuming that profiles of what is observed at these clinics are profiles of what WIC is like across the nation. This caution is particularly appropriate for those characteristics (such as locale, size, and distribution system) which were stratifying criteria in the selection procedure.

Participant Sampling

The original study design called for attempting to obtain the following set of participant interviews at each clinic: 25 current participants, 10 former participants, and 10 voluntary nonparticipants. Each was to be drawn randomly from a complete list of that set of persons in the clinic files. Upon attempting to obtain these samples, it became clear that systematic lists of former participants and voluntary nonparticipants did not exist. Therefore, interviewers were instructed to obtain as many of those two types of interviews as possible (up to 10 each) and

then to obtain enough randomly-selected participant interviews to bring the total number of interviewees at each clinic to 45. Names of voluntary nonparticipants and former participants were obtained from files where available, but more typically they were obtained from sources such as clinic staffs' memory. This procedure yielded 141 interviews with voluntary nonparticipants, 448 interviews with former participants, and 3,149 interviews with current participants. The former participant sample includes both dropouts and "graduates " (i.e., persons who left the program at the end of pregnancy or lactation or upon reaching his or her fourth birthday). No record was kept of whether a particular interviewee was a dropout or a graduate. The former participant sample and the current participant sample were merged together in the participant file, giving a total sample of 3,597 interviews; the voluntary nonparticipant sample was analyzed separately. Thus, the participant sample cited throughout this report consists of about 12 percent dropouts or graduates (who were not randomly selected) and 88 percent randomly-selected current participants.

SURVEY CHRONOLOGY AND METHODOLOGY

As the original prime contractor for this study, NBS produced the above study design and survey design. While designing the study and developing survey questionnaires, NBS selected Associate Control Research and Analysis, Inc. (ACRA) to administer the survey in the field under NBS monitoring. NBS also intended to process the data, to perform analysis, and to write the final report. However, when the Technical Analysis Division was ordered to be phased out by June 1975, NBS selected The Urban Institute to perform these tasks in its stead; the Institute became actively involved in the study early in January 1975. Because of the phasing-out of the NBS role during the course of the study, monitoring and decision-making during the survey were performed in part by NBS, in part by the USDA, and in part by The Urban Institute.

Study Design Phase

The months from September 1974 to March 1975 composed the pre-survey phase of the study. The first order of business was to familiarize NBS's analytical staff with the WIC program. NBS personnel held extensive discussions with WIC personnel at the USDA in Washington, D.C., attended two regional meetings of WIC administrators, and made site visits to 12 program areas in five states. From these visits, from data in USDA files, and from investigation of legislative history, a study design, a sample design, and survey instruments were prepared. Personnel from the USDA, ACRA, and The Urban Institute commented on aspects of the design as it progressed.

Pretest

On December 15-20, 1974, 14 ACRA interviewers who were to function as supervisors during field operations were assembled in Washington, D.C.[4] They received two days of training, covering background on the WIC program, the nature of study, and detailed survey procedures (interviewing, editing, and validation). In most cases, they were experienced survey interviewers. They then participated in field trials of questionnaires at three sites and then in questionnaire revision. ACRA personnel and Urban Institute personnel also participated in further field trials in January 1975 at four other sites. Both administrator and participant questionnaires were tested and subsequently revised.

Interviewer Training

On March 8-9, 1975, the 14 supervisors were again convened in Washington, D.C., for training, this time focusing on details of the survey instruments. Personnel from NBS and The Urban Institute participated in the training, while personnel from the USDA and the General Accounting Office observed.

Upon completion of this training, each supervisor returned to his area of the country and conducted training sessions for the six to eight additional interviewers for whom he was responsible. These sessions lasted one to two days. They covered background on the WIC program and the study, interviewer deportment and interviewing procedures, and specific questions on the survey instruments. Role-playing was utilized to familiarize new interviewers with interviewing techniques. Eighteen sessions were held in all, of which personnel from NBS or the USDA observed four.

Each interviewer was equipped with a 125-page interviewer's manual covering both general procedures and background on specific questions.[5] Additionally, written instructional memoranda were issued during the course of the survey when problem areas of procedure or interpretation were identified.

Interviewing

On March 26, 1975, the Statistical Policy Division of the Office of Management and Budget granted approval of survey questionnaires, and

---

[4]Further details on interviewer preparation and on field operations are available in Final Report (Data Collection Phase), Survey of the Department of Agriculture's Special Supplemental Food Program for Women, Infants and Children. ACRA, Inc., September 10, 1975.

[5]Interviewer's Manual: WIC Program Survey. ACRA, Inc., no date, 91 pages. Supplement to Interviewer's Manual: WIC Program Survey. ACRA, Inc., no date, 33 pages.

interviewing commenced. All interviews were completed by June 13, 1975. Where possible, administrative interviews were done in descending order down the administrative hierarchy (state office first, then program area office, then clinic, then retailer) so that interviewers had the maximum amount of background for each interview. For the same reason, in most cases, administrative interviews were conducted prior to participant interviews. Also, in most cases, state and program office interviews were performed by one of the 14 supervisors, while the remaining 85 regular interviewers typically handled one clinic interview and one retailer (if needed), plus one clinic's set of participant interviews.

Administrative Interviews

The set of administrative interviews needed to provide all information for one clinic required as many as seven separate interview forms: a "face-to-face" form and a "mailout" each for the state office, the program area office, and the clinic, and (where applicable) a "face-to-face" form for the retailer. Where state offices were administratively combined with program area offices or where program area offices were combined with clinics, redundant questions or forms were omitted. Mail-outs were used to elicit detailed, quantitative information which might require examination of accounting records (to provide,for example, cost or caseload information); face-to-face forms covered information more readily available. At some locales, interviewers gave assistance in completing the mailout forms, and in other locales, offices were excused from providing detailed information if it would have been too time consuming to do so; decisions to allow gaps in data were made jointly by NBS, ACRA's study director, and The Urban Institute, not by the interviewer in the field.

Face-to-face interviews at state, program areas, and clinics typically lasted one to two hours, while retailer interviews lasted about 15 minutes. In each case, the interview started with the head of the office being interviewed (state WIC director, WIC program area director, WIC clinic director, or store manager), with instructions to administer certain questions to whoever in the office could answer best (for example, the head of the office, the accountant, or the nutritionist), and to administer other sections to certain subordinates (the WIC clerk, the grocery clerk). Where possible, interviewers also obtained copies of clinic operating materials such as sample vouchers or written instructions. Administrators were guaranteed that no individual office or person would be identified in reporting data from their interviews.

Interview completion rates for face-to-face interviews at the various administrative levels were as follows: state office--30 out of 30, or 100 percent; program area offices--60 out of 61, or 98 percent; clinics--95 out of 96, or 99 percent;[6] and retailers--71 out of 80, or

[6]This 99 percent is of the 96 clinics still in the sample when actual field surveying commenced. This would, of course, be 95 percent of the clinics in the original 100-clinic sample.

89 percent. For mailout data, the following completion rates were obtained: state offices--29 out of 30, or 97 percent; program area offices--56 out of 61, or 92 percent; and clinics--90 out of 96, or 94 percent.

Such lengthy, multiple, and complex interviews generated a large volume of data, and the wide variety of administrative arrangements in WIC program areas generated some difficulties of comparability. Hence, once all administrative interviews of relevance to one clinic were obtained, the set of interviews was subjected to an extensive editing and extracting procedure. Answers from various parts of the administrative hierarchy were checked for consistency, responses were translated into consistent terms, codes were established for open-ended questions, and, in some cases, missing answers were interpolated from other clinics in the same program area or other programs in the same state.[7] About 75 (or 40 percent) of the 186 administrators at all levels who had been interviewed were recontacted by telephone for clarification of responses. This activity was done by the professional staff of The Urban Institute who later conducted the analysis of the data. After these data were prepared and keypunched, a final hand-check of the data set was performed; it led to corrections in about 1 percent of the variables.

The end product of this editing step was an administrative data file covering 96 clinics and containing 630 variables per clinic. It is important to note that although the basic sampling unit was a WIC program area, the basic unit of analysis was the clinic. This was done because the clinic is the point of delivery of WIC services. As the data came in, it also became clear that in many cases individual clinics within the same program area followed different policies and operated in different environments (e.g., they served different ethnic groups). They therefore were meaningful separate data points. Each one of the 96 "clinic" data points then consisted of data on the clinic level of operation, the program area office associated with that clinic, the state office associated with that clinic, and the retailer sampled at that clinic. For data such as administrators' opinions, responses at each level were recorded separately; for data such as costs, total costs incurred for delivery of services were calculated as the sum of all the costs at a clinic plus a pro rata share of costs incurred at program area and state offices; for data on clinic policies, a single response was devised representing the policy actually in force usually based on responses by persons closest to the operating level. Thus, throughout this report, the reader must be aware that the term "clinic" sometimes refers to the clinic level of operations and sometimes to that level plus a pro rata share of the entire supporting hierarchy of program area and state office; the meaning is usually made clear by the context.

---

[7]Where extensive adjustments were made to the raw data as received from the survey, these adjustments are noted in footnotes or technical notes in the main body of this report.

Participant Interviews

The procedure for obtaining a random sample of active participants involved drawing a fixed fraction of names from clinic files (for example, every fourth name).[8] The fraction pulled was whatever was necessary to obtain the number of participant interviews needed (which depended on how many former participant and voluntary nonparticipant interviews had been obtained). In some cases, the interviewer created the sample himself, and in other cases the clinic staff did so under the interviewer's instruction; the latter procedure was used whenever the clinic felt that confidentiality of medical records precluded the interviewer's having access to clinic files. The overall participant sample, including both current participants and former participants, subdivided into 3,597 completed interviews (75 percent), 1,143 failures to contact (24 percent),[9] and 57 refusals (1 percent). At individual clinics, the number of participant interviews obtained averaged 38 and ranged from 11 to 45. Since there were approximately 450,000 women, infants, and children enrolled or formerly enrolled in WIC at the time of the survey, the 3,597 interviews amounted to a sample of a little less than 1 percent.

A participant interview typically lasted 45 minutes to one hour. The respondent was to be the WIC recipient herself (in the case of an adult woman) or the parent or guardian of the WIC recipient (in the case of an infant or child). In most cases, the ethnic background of the interviewer matched that of the respondent. Most interviews took place in respondents' homes, but at six clinics, up to 30 percent of interviews took place at the clinic; this was allowed in cases of dangerous neighborhoods or long distances to travel to the homes. Spanish-language interviewers and translated questionnaires were utilized where appropriate, and all display cards were read to all respondents to avoid embarrassing those with reading difficulties. Respondents were given assurances that the interviews would be confidential and that their responses would not affect their continuance on the WIC program; the name and address of the respondent was kept on a call sheet separate from the interview questionnaire, and during analysis, interviews were identified only by serial number.

Participant Interview Validation

Field supervisors validated 10 percent of participant interviews, or about four per clinic. In a validation call, the respondent was reasked three sets of questions which he had been asked in the interview: the number of present and former WIC participants in the household, the types of distribution methods he participates in, and the types and

---

[8]In this procedure, each WIC recipient was supposed to be treated individually, even if more than one recipient was found in the same household.

[9]Interviewers were instructed to make four callbacks in cases of failure to contact.

amounts of WIC foods he receives. These calls were made by telephone where possible and in person where necessary. They were omitted in a few clinics where in-person calls requiring long distance travel would have been required; at other clinics, validation calls to households which could be contacted by telephone were substituted for the households without telephones which had been randomly selected for validation. Validation calls were observed by personnel from the USDA or NBS for 12 of the 14 supervisors.

Participant Interview Editing

Supervisors were responsible for initial hand-checking of completed participant interviews, and about 200 interviews were returned by them to interviewers for reworking. Acceptable interviews were then forwarded to ACRA in Washington, D.C., where they were again hand-checked and then keypunched.

The interviews were then edited with a computer program developed by The Urban Institute and Group Operations, Inc. The program checked all responses for acceptable values and performed about 150 checks for logical consistency (for example, if a household member was indicated to be receiving WIC foods because she was pregnant, the program checked that the person was adult and female). When errors were detected, they were corrected using the original survey instrument as a data source. At the same time, open-ended responses were coded. The number of corrections made at this stage averaged two per interview or about three per 1,000 variables. The end product of this process was a data set containing 3,597 participant interviews with 734 variables per interview.

ANALYSIS

The main raw material for analysis then consisted of two data bases: one describing 96 clinics (with their associated state offices, program area offices, and retailers) and one describing 3,597 participant households (each identified by clinic, to allow joint analysis).[10] During analysis, use was also made of the separate data set describing the 141 nonparticipant interviews, some data gathered from USDA files in Washington, D.C., and hearings and data gathered by Congressional committees.[11] Analysis was solely the responsibility of The Urban Institute, while the USDA reviewed and commented on draft reports at several stages of preparation.

---

[10]Documentation of each variable in these data bases, original survey questionnaires, and editing procedures are available in Toby Henderson Campbell, Marc Bendick, Jr., and Melvin Jones, "A Guide to the WIC Data Bases," Working Paper 5038-1. The Urban Institute, April 1976.

[11]Most notably, Select Committee on Nutrition and Human Needs, United States Senate, WIC Program Survey--1975. 94th Congress, 1st Session, April 1975.